THE ENGINEERING AND MINING JOURNAL AND COAL

(Published Every Saturday at 253 Broadway, New York.)
Entered at the Post-Office of New York, N. Y., as Second Class Mail Matter.

VOL. LXXI. FEBRUARY 9, 1901. No. 6.

RICHARD P. ROTHWELL, C. E. M. E., Editor.
ROSSITER W. RAYMOND, Ph. D., M. E., Special Contributor.
THE SCIENTIFIC PUBLISHING CO., Publishers.

Copyright, 1901, by the Scientific Publishing Company.

SUBSCRIPTIONS ARE PAYABLE IN ADVANCE. For the United States, Mexico and Canada, $5 per annum; all other countries in the Postal Union, $7.
REMITTANCES should be made by bank drafts, post-office orders or express money orders on New York, payable to the Scientific Publishing Co.
When change of address is desired, both old and new address should be sen
NOTICE OF DISCONTINUANCE. The JOURNAL is not discontinued at expiration of subscription, but is sent until an explicit order to stop is received by us. We find that a large majority of our subscribers prefer not to have their subscriptions interrupted and their files broken in case they fail to remit before expiration. It is therefore assumed, unless notification to discontinue is received, and the amount of back subscription paid to date, that the subscriber wishes no interruption in his series. PAPERS RETURNED ARE NOT NOTICE OF DISCONTINUANCE.

Main Office: 253 Broadway (P. O. Box 1833), NEW YORK.

Telephone Number, 3,095 Cortlandt.
New York Cable Address—"ROTHWELL." (Use McNeill's or A B C 4th Edition Code.
London Cable Address—"PULCINETTO." " " " "

Branch Offices:
- Chicago, Ill 737 Monadnock Building, Phone 73 Harrison.
- Denver, Colo., Boston Building, Room 206.
- Salt Lake City, Utah, Atlas Building.
- San Francisco, Cal., Third Floor, Mills Building.

Vancouver, B. C., Office, Molson's Bank Bldg. Wm. M. Brewer, Manager.
London, Eng., Office, 20 Bucklersbury, 368. E. Walker, Manager.

English subscriptions to the JOURNAL may be paid at the London Office at the rate of $7 = £1 8s. 9d.; the publications of the Scientific Publishing Company may be bought at the rate of 4s. 2d. to the dollar, net.

CONTENTS.

	Page
Editorial Notes	171
The Carnegie Sale	172
Coal Imports and Exports	172
New Publications	173
Books Received	173
Correspondence	173
The Smelter Consolidation	174
Mine Accidents in Great Britain	174
*The Beaumont Oil-Field, Texas.....William B. Phillips	175
*A Large Gas Engine	177
*The Origin of Vein Cavities.....Frank L. Nason	177
*The Truckee River Electric Power Plant	179
Blast-Furnace Slag as a Fertilizer.....Alexander D. Elbers	180
An Improved Colombian Gold Mill.....Edward Halse	181
The Ohio Institute of Mining Engineers	182
Lake Superior Ore Shipments	182
Recent Decisions Affecting the Mining Industries	182
Mineral Collectors' and Prospectors' Column	183
Questions and Answers	183
Patents Relating to Mining and Metallurgy	183

* Illustrated

Personal..... 185
Obituary..... 185
Societies and Technical Schools..... 185
Industrial Notes..... 185
Trade Catalogues..... 186
Machinery and Supplies..... 186

Mining News.

United States:
Arizona 186
California..... 186
Colorado..... 186
Idaho..... 187
Iowa..... 187
Louisiana..... 187
Maine..... 187
Michigan..... 187
Minnesota..... 188
Missouri..... 188
Montana 188
Nevada..... 189
New Mexico..... 189
New York..... 189
North Carolina. 189
Oregon 189
Pennsylvania.... 190
South Carolina. 190
South Dakota... 190
Texas..... 190
Utah 190
Washington..... 190
West Virginia.. 191

Foreign:
Mexico 191
South America. 191

Markets.

Coal:
New York..... 191
Birmingham . 191
Chicago..... 191
Cleveland..... 191
Pittsburg..... 191
Foreign Coal Markets ... 192

Slate:
New York. 192

Metals

Iron:
Pig Iron Production.. ... 192
Birmingham.. 192
Buffalo 192
Chicago..... 192
Cleve'and..... 192
Philadelphia.. 192
Pittsburg..... 192
New York..... 193

Gold and Silver Prices, Statistics, Imports and Exports 193
Foreign Coins. 193
Copper 194
Tin..... 194
Lead 194
Spelter..... 194
Antimony..... 194
Nickel..... 194
Platinum..... 194
Quicksilver.. 194
Minor Metals. 194

Chemicals and Minerals;
New York..... 195

Mining Stocks.

Market Reviews:
New York..... 195
Boston 195
Colo Springs.. 196
Salt Lake City 196
San Francisco 196
London..... 196
Paris..... 196

Meetings...... 196
Dividends...... 196
Assessments. .. 196
Stock Quotations:
New York..... 197
San Francisco 197
St Louis..... 197
Boston 197
Philadelphia.. 197
Salt Lake City 197
Toronto. 197
Colo. Springs.. 198
Montreal..... 198
Mexico..... 198
Denver..... 198
Spokane. 198
Paris 198
London..... 198

Mining Co's,
List of..... 199

Current Prices:
Minerals, Chemicals, etc..... 200

Alphabetical Index to Advertisers.....Page 20
Classified List of Advertisers.....Pages 14, 15, 16, 17, 29

The extraordinary legal complications in which the mining companies of the Butte District in Montana are involved are shown by the fact that the calendar of the District Court for the February term alone had on it no less than 23 separate suits, noticed either for trial or for motions or demurrers. Nearly all of these suits are of importance, affecting valuable mines, and every large company in the district is more or less affected by them. Evidently the law is a profitable pursuit in Butte.

A curious instance of the difficulty which governments seem to experience in conforming themselves to commercial methods is found in the fact that, although the Indian Government has been for the past year a large buyer of gold in London and Australia, the mines of the Colar Gold-field have shipped all their output to London. The Bombay Mint has no facilities for refining gold, and the terms and conditions of payment for gold deposited there were such that the managers of the mines preferred to pay freight, insurance, etc., to London. The Indian Government, meantime, is paying these charges on the gold it buys in London and Melbourne.

The transfer of the controlling interest in the Southern Pacific Railroad Company to the managers of the Union Pacific is reported, the latter having purchased the stock owned by the Speyer party and the Huntington estate. If this is true, it may be of importance to the mining interests of a large part of California, of Nevada and Arizona. The Union Pacific people have usually shown a disposition to encourage interests tributary to the road. It is to be hoped that the narrow policy of looking only to immediate profit and exacting the highest possible rates—which the Southern Pacific has consistently followed under the Huntington management—will be abandoned for a more liberal and far-sighted plan.

The mines of the Colar Gold-field in India are soon to be supplied with motive power transmitted from the Cauvery Falls, where a very large electric plant is now being installed. The peculiar feature about this plant is that the Mysore Government is erecting it without any contribution from the mines, the latter being called upon only for the payment of a moderate yearly rental, and an agreement to continue this for 10 years. It is expected that with this power the working costs of the mines can be considerably reduced. As a number of companies in the district have been paying dividends—varying from 40 to 130 per cent. yearly—they seem to be peculiarly fortunate in securing this further aid.

A serious question to many interests is the gradual exhaustion of the lumber of the Northwestern States. According to the figures carefully collected by the "American Lumberman" the total product of white pine lumber in Michigan, Wisconsin and Minnesota reached its maximum in 1892, when it was 8,594,000,000 feet. In 1895 it was 7,050,000,000 feet, and since then it has gradually declined. In 1900 the total was 5,485,261,000 feet—1,564,739,000 feet less than in 1895 and 3,108,739,000 feet less than in 1892, though there was every inducement last year to make the largest possible output. In a very short time the white pine of the Northwest will be entirely exhausted, and the effect will be apparent in scarcity and consequent high prices. These are already felt to a serious extent. This is one more instance of the recklessness with which our forest resources have been treated, the lumbermen looking only to immediate profit, without any consideration for the future.

The vexed question of the valuation and taxation of mining property has come up again, this time in New Jersey. The assessors of Sussex County in that State have been for several years trying to raise the valuation of the property of the New Jersey Zinc Company in the township of Hardiston; but their arbitrary increases have been set aside by the courts, chiefly because there is no statutory provision in that State for valuing or taxing minerals underground. This year the matter has been fought over again, the county assessors, the State Board of Taxation and the company all taking part. Finally a compromise was reached by which the valuation of the company's mines was increased by $420,000, or about 50 per cent. This still leaves the question in a very unsatisfactory state. The valuation is a purely arbitrary one, and in New Jersey, as in many other States, no one seems able to determine the just or rational basis on which mining property should be valued for taxation purposes.

From recent utterances in Parliament it is evident that the British Government adheres to its plan of charging as large a part as possible of the cost of the war in South Africa upon the future revenues of the Transvaal. Great pressure has been brought to bear upon the Gov-

ernment in London to change this plan, but without effect. Evidently Lord Salisbury and his financial advisers appreciate the present frame of mind of the British taxpayer, and believe that his opinions cannot be disregarded safely. This plan involves the raising of a considerable sum yearly from the Transvaal to meet interest and sinking-fund charges; and there will be for some time to come very little property outside of the mines which will be able to pay taxes at all. It is not improbable that the savings made by the abolition of the monopolies will be counterbalanced by the increased taxation.

For the present, however, the question is postponed, as it still seems to be very uncertain when work can be resumed at the mines.

For some reasons it is to be regretted that the Mackenzie receivership cases from the Nome district have been settled out of court by a compromise. A trial in which the facts in this case would have been clearly brought out might have helped to show the reasons and results of the summary action of the court at Nome. If report is anywhere within sight of the truth, the testimony in the case might be extremely interesting. Now, however, the case will not be tried at all, and the testimony will not be made public.

It is to be regretted that there is little or no prospect that Congress will do anything at the present session toward supplying a better mining law for Alaska. The condition of matters there is extremely unsatisfactory. The development of the Nome District is retarded by the absence of definite provisions of law and impossibility of obtaining valid titles to property. New and better regulations will help materially in the establishment and growth of the mining industry in Alaska; but these do not seem to be probable this year.

Arguments have been heard before the United States Supreme Court in the suit between the Carnegie Steel Company and the Cambria Steel Company, which involves the validity of the Jones mixer patent. This patent, it will be remembered, covers—according to the claim of the Carnegie Company—use of a mixer or reservoir into which the molten iron from the blast furnaces is run when steel is made by the continuous process; from which reservoir the metal is drawn as needed for the converters. The Carnegie Company owns the Jones patent, and seeks to enjoin the Cambria Company from using a mixer or reservoir, which is claimed to be an infringement of the patent. The Cambria Company's argument, which has been submitted, is to the effect that neither the use of molten iron direct from the blast furnace nor the introduction of an intermediate reservoir is novel or patentable. As to the use of blast furnace metal instead of pig iron remelted, it is claimed that Sir Henry Bessemer recommended it in his original patent specifications; that it was used in England as early as 1874 and in the United States by the Illinois Steel Company in 1882. The use of a reservoir in which the metal from different blast furnaces or cupolas might be held until needed and at least incidentally mixed, was represented in the argument to have been mentioned in the English patents of Deighton in 1872, and the American patent of Witherow in 1885. It was described by Holley in 1877, and by Snelus in 1878. Moreover, the mixer was used—though for foundry iron and not in making steel—at the Whitney car wheel works in Philadelphia in 1847. It is argued, therefore, that the patent is invalid on account of lack of novelty. It is further argued that, even if the patent is not set aside for lack of novelty, it does not cover the method in use at the Cambria Works.

The expectation is that the Supreme Court will give a decision in this case at the present term, and thus finally settle a question of much importance to steel-makers.

THE CARNEGIE SALE.

Reports are numerous this week of the final conclusion of an agreement under which Mr. Andrew Carnegie will sell his stock—the controlling interest—in the Carnegie properties to a syndicate represented by Mr. J. P. Morgan, and including the Rockefeller and other interests represented in the Federal Steel and its allied companies. The prinpals in the matter refuse to make any positive statements, but there seems to be little doubt that negotiations, which have been going on for some time, have nearly reached a conclusion. Mr. Carnegie sometimes changes his mind about business matters on short notice; but it seems probable that he will at last close his direct and active connection with the great property he has built up. The report is that he will sell to the syndicate $87,000,000 of the $160,000,000 stock of the Carnegie Company, retaining probably his holding of the bonds of the company, which is said to amount to $100,000,000.

What action the syndicate will take; whether there will be a general consolidation of the trade into one enormous corporation, or whether the different concerns will be continued as they are, working on a "community of interests," is, of course, still in the future. If, as anticipated, the sale is completed, the result will be an entire change in the trade, which will then be in the hands of men who have always operated for speculative rather than manufacturing profits, and will now be able to carry out their plans unchecked. The control of the Carnegie Company carries with it practically the control of the steel trade. Long ago Mr. Carnegie formed the plan of uniting under one control all the operations incidental to steel making, from the mining of the ore and coal up to the final delivery of the finished products. In this he has succeeded, and has also organized his business so that his works can put material on the market at rates which would result in loss to all their competitors, while they were securing a moderate profit.

For many reasons we believe that this transfer of control—if completed, as now seems most probable—is to be regretted. We have not the space here, however, to enlarge upon these reasons, and must defer fuller comment to another time.

COAL IMPORTS AND EXPORTS.

Coal exports from the United States in 1900, though by far the largest on record, absorbed only a very small part of our total production. The quantity of mineral fuel of all kinds exported in 1899 and 1900 are given by the Treasury Department returns as below:

	1899.	1900.	Changes.	Per ct.
Anthracite coal	1,707,796	1,662,286	D. 45,510	2.7
Bituminous coal	4,044,354	6,255,033	I. 2,210,679	54.7
Total coal	5,752,150	7,917,319	I. 2,165,169	37.6
Coke	280,196	376,999	I. 96,803	34.6
Totals	6,032,346	8,294,318	I. 2,261,972	37.5

The exports of anthracite coal, which go chiefly to Canada, showed a slight decrease, which was chiefly the result of the miners' strike in Pennsylvania. The coke exports which are made to Canada and Mexico—chiefly the latter country—increased considerably. The main change, however, was in shipments of bituminous coal, which forms the bulk of our exports. The division of the exports in 1899 and 1900 is shown in the following table:

	1899.	1900.	Changes.
Canada	4,376,287	5,422,493	I. 1,046,206
Central and South America	94,279	223,795	I. 129,516
Europe	35,322	635,237	I. 599,915
Hawaii and Philippine Isles	89,309	96,870	I. 7,561
Mexico	560,059	664,036	I. 103,977
West Indies	581,614	760,879	I. 179,265
Other countries	15,280	114,009	I. 98,729
Total, tons	5,752,150	7,917,319	I. 2,165,169

Setting aside Mexico and Canada, which naturally draw a large part of their supplies from the United States, we find a considerable increase, in the quantity taken by the West Indies. Much of this went to Cuba, the gain being due to the greater industrial activity in the island. To South America there was a large increase, though the total quantity taken last year was not large. The most notable gain was in the exports to European countries, which in 1900 for the first time make some show on the books. The greater part of the coal sent was to France—which took 169,800 tons; to Italy and other Mediterranean countries; and to Russia. These are all comparatively new customers, and have been heretofore supplied with English coal. The scarcity and high prices in England made it possible last year to place American coal in Mediterranean ports at comparatively low prices, notwithstanding the high rates of ocean freight.

This exhibit of our foreign coal trade last year shows that it was still small in actual amount, notwithstanding the comparative gain. Outside of the trade on the American Continent, which comes to us naturally, the quantity was less than 1,000,000 tons. Whether it will be extended is a question, the answer to which depends largely on the exporters. If they are willing and prepared to run a certain amount of risk for a few years they can build up a stable trade of considerable value with Southern Europe and with Russia. In the important coal-producing countries, such as Great Britain and Germany, there is little opportunity, except in occasional emergencies.

Coal imports into the United States in 1900 were insignificant as compared with our total production. The quantity and source of these imports, as reported by the Treasury Department, is shown in the following table:

	1899.	1900.	Changes.	Per ct.
Canada	1,010,700	1,484,576	I. 473,876	46.9
Mexico	103,014	41,326	D. 61,688	59.9
Australasia	146,933	254,183	I. 107,250	73.0
Japan	12,715	9,045	D. 3,670	28.3
Europe	126,692	118,987	D. 7,705	6.1
Other countries	407	1,141	I. 734	...
Totals	1,400,461	1,909,258	I. 508,797	36.3

The imports of anthracite were insignificant, amounting only to 118 tons in 1900. The imports from Canada, which are over three-quarters of all those noted above, were all on the Pacific Coast, with the exception of the Nova Scotia coal which comes to New England. This showed a large comparative increase in 1900, owing to the use of Cape Breton coal in the New England Gas and Coke Company's plant near Boston. All the coal reported as received from Europe, with the exception of 408 tons, was British coal delivered at California ports.

The Australian and Japanese coals were also delivered in California; while two-thirds of the coal from Canada was British Columbia coal sold on the Pacific Coast. The coal from Mexico was sold on or near the border. Our coal imports were not an important factor in the trade anywhere outside of California.

NEW PUBLICATIONS.

1. "Plans of Conciliation and Arbitration." 2. "Organization of the Employer Class." By Herman Justi. Chicago; the Illinois Coal Operators' Association. Pamphlets; pages, 28 and 18.

These pamphlets are mainly occupied by a plea for the better organization of employers, not for the purpose of coercing their employees, but in order to treat better and more intelligently with them for the settlement of questions which may arise, and to put the relations of employers and employed on a better and more satisfactory basis than now exists. Some strong arguments are presented, and we expect to give our readers shortly some account of the plans which the Illinois Coal Operators' Association is endeavoring to carry into actual practice. Any intelligent contribution to the discussion of the vexed question referred to should be welcomed and carefully considered.

"American Industrials, with Special Reference to their Preferred Stocks as Investments." New York; J. S. Bache & Company. Pages, 114.

This pamphlet contains descriptions of the organization, financial condition and other salient facts of 30 industrial securities. The object is to show that there are a number of industrial stocks which may be considered safe from the investment basis. An appendix gives a digest of New Jersey laws, under which many of the companies are organized, where the protection afforded to preferred shareholders under the general laws of the State of New Jersey is pointed out and the special conditions which differ therefrom in the case of individual companies. The specific information given includes the organization, payment of dividends since consolidation, officers and directors, financial statement, balance sheet, president's report, bond investment account, constituent companies, annual output of the subsidiary companies before consolidation and since, character of product, range of stock quotations, underwriters' profits, preferred stock powers, charter requirements, character of control and investment advantages.

"The Mines of Japan." Prepared by the Bureau of Mines, in the Ministry of Agriculture and Commerce. Paris: published by the Imperial Commission of Japan to the Paris Exposition. Pages, 530; with map and illustrations.

This carefully prepared and handsomely printed volume is a directory to all the mines of Japan. The introduction gives a number of tables containing statistics of the production of the principal mines; the mineral production of the Empire and its value; the motive power employed in the mining industry; and the Japanese weights and measures with their metric and English equivalents. The main body of the book consists of condensed accounts of the different mines, varying in length according to their importance. These accounts include usually a history of the mine; some account of its geological surroundings; the nature of the mineral deposit; the development up to date; the methods of ore treatment in use; transportation facilities, supplies of fuel and other facts of interest. It is one of the most elaborate works of the kind which we have ever seen, and its preparation shows a degree of careful attention to details which is rarely found. It is in the French language.

"The Chemists' Pocket Manual." By Richard K. Meade. Easton, Pa.; the Chemical Publishing Company. Pages, 204. Price, $2.

This is one of a class of books it is really impossible to criticise. Its value can only be determined by long use. An idea of the book can, perhaps, be conveyed by summarizing its contents, which include first tables for the comparison and conversion of weights and measures, covering almost every possible contingency which may arise in chemical work. Following these are electrical and mechanical formula and notes. Then there are tables and formulas for specific gravity, heating value of gases and many other points to which a chemist must frequently refer. In addition to these we have a number of tables and determinations including: Determination of the solubility of a substance; Tables of the solubility of salts; Volumetric solutions; Standardizing volumetric solutions; Solutions used in quantitative and qualitative analysis; Table for converting CO_2 to C; $BaSO_4$ to S; $Mg_2P_2O_7$ to P; SiO_2 to Si; K_2PtCl_6 to K_2O; $Mg_2P_2O_7$ to MgO; N to NH_3; $CaSO_4$ to CaO; $Mg_2P_2O_7$ to P_2O_5; Scheme for the qualitative analysis of a substance; Analysis of iron ores; Determination of silicon, manganese, sulphur, phosphorus and carbon in pig iron or steel; Analysis of blast-furnace slags, limestone or cement, and coal and coke; Determination of the alkalies in clay, limestone, cement, glass, etc.; Determination of copper in ores; Assay of zinc ores for zinc; Determination of lead in lead ores; Analysis of alloys and bearing metals; Examination of water for boiler purposes; Determination of hardness of water; Examination of lubricating oils; Analysis of soap and fertilizers; Determination of carbon and hydrogen in organic substances.

The book is bound in pocket-book form and must be extremely useful to the chemist or assayer in his daily work.

BOOKS RECEIVED.

In sending books for notices, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review on another page of the Journal.

"American Industrials, with Special Reference to the Preferred Shares as Investments." New York; J. S. Bache & Company. Pages, 114.

"South Australia, Statistical Register. Part III, Production." Compiled from Official Records. Adelaide, S. A.; Government Printer. Pages, 86.

"Statistical Annual of the Kingdom of Norway." Prepared by the Central Bureau of Statistics. Christiania, Norway; published for the Bureau. Pages, 138.

"Elevation and Stadia Tables; Together with Hydraulic Tables." By Arthur P. Davis. New York; John Wiley & Sons, and London; Chapman & Hall, Limited. Pages, 44.

"Special Consular Reports, Volume XXII, Part I. Acetic Acid in Foreign Countries." Compiled by the Department of State. Washington; Government Printing Office. Pages, 84.

"California State Mining Bureau. Bulletin No. 18. The Mother Lode Region of California." By W. H. Storms. Sacramento, Cal.; State Printing Office. Pages, 154; illustrated.

"South Australia. Agricultural and Live Stock Statistics for the Year Ending March 31st, 1900. Compiled by L. H. Sholl, Government Statist. Adelaide, S. A.; Government Printer. Pages, 74.

"Annual Report of the Director of the United States Mint for the Fiscal Year Ended June 30th, 1900." George E. Roberts, Director of the Mint. Washington; Government Printing Office. Pages, 532.

"Sixth Annual Report of the Boston Transit Commission." George G. Crocker, Charles H. Dalton, Thomas J. Gargan, George F. Swain, Horace G. Allen, Commissioners. Boston; published by the City. Pages, 64; illustrated.

"Report of the Director of the Mint upon the Production of the Precious Metals in the United States during the Calendar Year 1899." By George E. Roberts, Director of the Mint. Washington; Government Printing Office. Pages, 436.

"The Cement Industry. Descriptions of Portland and National Cement Plants in the United States and Europe, with Notes on Materials and Processes in Portland Cement Manufacture." Reprinted from the "Engineering Record." New York; the "Engineering Record. Pages, 236; illustrated. Price, $3.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials will only be published when so requested.

Letters should be addressed to the MANAGING EDITOR.

We do not hold ourselves responsible for the opinions expressed by correspondents.

The Arizona, Eastern & Montana Company.

Sir: Speaking of the Arizona, Eastern & Montana Company, which has recently gone to pieces under the sheriff's hammer, it is but justice to me—who was its superintendent in 1900—that it should be known that the endeavors of one or two individuals to shift responsibilities on to me for results I had no control over can be disproved by unmistakable evidence. I still have the original letters and contracts I made with the company, and also the books kept during my superintendency. I had no stock, and knew nothing about the sale of stock, but the books account for every dollar received by me from the New York office. After I accepted the position as superintendent of the smelter, I smelted up a lot of ores which I found on hand, and sent the 50 per cent. copper matte to Robertson & Zeigler, New York, by order of the manager. I had nothing to do with what they cost or contained, but I have preserved the proof that I got out all there was in them, except 0.85 per cent. copper and 66c. in silver. Considering that they were loaded down with sulphur, arsenic and alumina, and that the smelter was an old rattle-trap, I was nearly satisfied that better metallurgical work could not be done. If the company sold $500,000 worth of stock, as you state, but little of the money ever got further west than New York. During my superintendency I got about $10,000 for mine development, machinery and general expenses, and shipped matte worth about $3,700. A large part of the money went to fulfill unwise contracts that were made before I took charge. I was careful to keep my proofs of all my own responsibilities in the field during my connection with the company, and will be pleased to spread them before any stockholder or any other parties interested in my record. I had nothing to do with the extravagant assertions of certain circulars that my attention was called to after I had left the company, but I still stand to my former assertion, made through your valuable columns, that the company had good prospects and at least one good mine if they had been developed by funds put into legitimate work.

I shall be pleased to turn over the books to any one having legal authority to receive them, upon payment of what the company owes me on salary account. C. Wade Stickney.

Boise, Idaho, Jan. 28, 1901.

The Arimex Consolidated Copper Company Bubble.

Sir: I have just read the long advertisement of the Arimex Consolidated Copper Company in the "New York Journal" of January 20th last. In this ad. the officers of the Arimex Company offer 60,000 shares of the treasury stock of the company at $25 per share, par value of the stock, and inform the dear public that they own 500,000 shares out of a total of 500,000 shares of the Oxide Copper Company of New Jersey, and 1,750,000 shares out of a total of 2,000,000 shares of the Table Mountain Copper Company of Illinois; and they state further that the Oxide Copper Company owns the Copper Prince Group of copper claims located in the Silver Bell Mining District, Pima County, Arizona, comprising 30 claims, and that the Table Mountain Copper Company owns 27 claims in the Bunker Hill Mining District, Pinal County, Arizona. They want the money from the sale of these 60,000 shares, treasury stock at $25 per share, for the purpose of placing all these properties upon a dividend-earning basis in the shortest possible time.

I desire to inform the investing public, through the columns of the "Engineering and Mining Journal," which has ever been on the side of straight dealing and legitimate mining, that this whole thing is a gigantic bubble. The Copper Prince Group of 30 claims could not supply 30 tons of profitable ore in 30 days with 300 men. I enclose a copy

of William Young Westervelt's report on this group, made in April, 1899, and state that his opinion of those mines has been more than verified in the shaft—which has now reached a depth of 482 feet—which was sunk between the Copper Prince and Gifford mines, ostensibly to cut the ore deposit at about 250 ft. Two strips of very lean copper ores—about 1.2 per cent. copper pyrites in calcite, impossible of concentration—have been cut by this shaft, and the shaft is now in the granite bed-rock and water. There is no probability of the existence of a body of profitable ore anywhere on the 30 claims. The superficial ore deposits, which have long since been extracted and carted away, were chemical depositions of copper in solution, leached from the cropping of the deposits of copper ores in the Atlas and Old Boot mines, adjacent.

As to putting the Table Mountain Group upon a dividend-earning basis, I want to say that this Arimex deal has been engineered in part, if not wholly, by one George H. Sisson, of Clifton, Arizona, and Topolobampo fame, who for certain reasons keeps himself in the background and his name out of the literature of the Arimex Company. This man, Sisson, at the head of an Illinois company, operated the Table Mountain mines for upward of two years with a first-class equipment—as fine a copper-smelting plant as was ever erected in Arizona—and after "blowing in" over $200,000 it was finally shut down for debt. The Table Mountain vein is a massive outcrop of very cherty quartzose, barren, with the exception of occasional small lenses of arsenical copper ores—olivenite and liroconite, with some pneudomorph crystals of malachite and cornwallite, but of scarcely great enough quantity to be commercially successful with even a very small plant. Had it been possible to have placed the Table Mountain's 27 claims upon a dividend-earning basis it would have been done during the time it was in operation, for Sisson had the assistance of the late Dr. Frederick M. Endlich, who was, theoretically and practically, a thorough miner and copper smelter.

Arizona has good mines, and needs money for legitimate enterprises, but such schemes as you have often referred to made it a difficult matter to enlist capital for any project; and the writer, for one, has determined to expose any tricky or questionable deal started or attempted in Arizona Territory, and earnestly relies on the "Engineering and Mining Journal" to assist in the exposure of such frauds, well convinced that our faith in the "Journal" will be fully realized.

Tucson, Arizona, Jan. 30, 1901. Arizona.

THE SMELTER CONSOLIDATION.

With regard to the consolidation of the Guggenheim interests with the American Smelting and Refining Company, which is to be formally completed February 16th, Messrs. Simon and Daniel Guggenheim, who have been visiting Colorado, have given out the following statement to the Denver papers: "Our business has not been absorbed. There has been a merging of the two interests and an exchange of securities. We had considered for a long time the proposition to join our company with the other and finally decided that we could work out bigger problems to better advantage doubly than singly. In the handling of metals, the miner will be enabled to get the full prices that are paid and what benefits the miner is of advantage to the smelter. We have kept up the price of lead and we propose to do the same with silver. In course of time we hope to handle silver as intelligently as we have jointly treated lead.

"To-day silver is scientifically and secretly bought by four brokers in London who stand in with each other and the buyer. The seller sells his product from day to day and is at the mercy of the brokers. This can and will be changed as soon as the thing can be rounded up. We intend pursuing the same liberal policy toward the miners that the Guggenheims have pursued in the past, and before entering upon the merging with the American people a number of discussions were held in this regard. We were glad to learn that this policy fully accords with their views.

"Some few years ago Russia bought 90,000,000 oz. silver in one year, and it was not known by any of the sellers that that country was quietly absorbing the product. Last year India bought 60,000,000 oz., and silver was not raised in price. The reason for this condition of affairs lies in the conflict of interests that have existed heretofore.

"The American Smelting Company now controls the silver output of South America, Central America, British Columbia, Mexico and the United States, which is nearly 80 per cent. of the output of the world. We did not enter this merger with the other company because we expected an increase of profits, but because we are satisfied that this industry can be made one of the best industrials in existence under proper and just administrations. We are not dependent on the times like other industrials; our business goes on in poor as well as good times. The profits that M. Guggenheim's Sons will make finally will be by the increase of the value of their securities in the smelter company. Another great advantage that will accrue by the merging will be in the establishing at the different smelters of the best features contained in each.

"We believe that instead of the smelter company being a menace to the country it will be an advantage. In the first place the receipts of the railroads will be increased by an increase of freight in and out. To the miner it will mean an enormous advantage. It will increase the product of his ores because under such a large operation as this will be, the smelters can assist the miner to mine his low-grade material which he now oftentimes allows to remain in the mines.

"We believe the smelter is, in a sense, to the miner what the banker is. The banker supplies him when in need of funds, and the smelter should supply him with low treatment charges. We ourselves are large mine-owners and large stockholders in the Guggenheim Exploration Company, which is a mining concern. None of these interests will be merged in the American Smelting Company.

"We have been investigating the field as to the men in our employ, as it was intimated that by the new arrangement there would be a surplus of talent. That is not so. On the contrary, there are too few. We have room for all and more. We mean to push our young men to the front and give them a show, as this is a business that will be here when we are all old and they will eventually have charge of the concern. Our firm has arrangements with the School of Mines of Columbia College, the Massachusetts Institute of Technology and the School of Mines at Golden, by which many of their young men are sent to us at the completion of their courses. We have graduates from technical schools all over the world.

"We have been getting information from large institutions like the Krupp Works in Germany concerning the methods of caring for their employees. We intend to apply the best of these methods to the men in our employ. It is our intention to improve the condition of the men and we hope to establish libraries and proper homes for them. We do not claim to be philanthropists, but believe that an improved condition of the men in our employ cannot but work an advantage to us. There is no doubt that the thrifty laborers will in time become investors in the securities of the company, and that is what we want.

"We realize that the greatest interest the company has is in Colorado and Utah. In Colorado we have nine smelters, and it is our purpose to increase them in size and to build new ones whenever it is deemed advisable. One of the conditions of the negotiations was that ample capital for this purpose and for all emergencies that should arise must be on hand. There will be a cash working capital of from $20,000,000 to $25,000,000, which will enable us to carry out these policies."

MINE ACCIDENTS IN GREAT BRITAIN.

The preliminary statement of the fatal accidents in the mines of Great Britain in the year 1900 has already made its appearance. Its early publication shows the promptness with which the reports of the mine inspectors are made. British mines are arranged in three classes; under the Coal Mines Act, which covers "mines of coal, fire clay, stratified ironstone and shale;" those under the Metalliferous Mines Act, which include all mines or underground workings other than those mentioned under the first head; and those covered by the Quarries Act, which applies to "every place (not a mine) in which persons work in getting stone, slate, coprolites or other minerals, any part of which is sure than 20 ft. deep.

The number of accidents and deaths in 1900 and in 1899 are shown in the following table:

	Accidents.			Deaths.		
	1899.	1900.	Changes.	1899.	1900.	Changes.
Coal mines	868	960	I. 92	916	1,011	I. 95
Metal mines	37	47	D. 10	38	56	D. 18
Quarries	122	117	I. 5	125	117	I. 8
Totals	1,027	1,124	I. 97	1,079	1,184	I. 105

The increase in coal mine accidents was doubtless due to the active working of the mines and to the consequent employment of a certain number of more or less inexperienced workmen. Of these accidents we find that 854, causing 901 deaths, occurred underground, while 106, with 110 deaths, were on the surface. The last-named class resulted chiefly from the operation of machinery and of railroads and tramways. In the underground accidents by far the most important cause was—as usual—falls of ground. To these were due 482 accidents, or 50.2 per cent. of the whole number; and 495, or 45 per cent. of the deaths. Shaft accidents were much lower in importance last year, their number being 76, or 7.9 per cent. of the total, while the deaths caused were 79, or 7.8 per cent. Explosions of gas or coal dust were comparatively few, their number being only 25, or 2.6 per cent., causing 46 deaths, or 4.6 per cent. of the total. Of the accidents classed as miscellaneous, the more important classes were those connected with haulage and with the use of explosives. The number of casualties caused by mine cars in motion indicates a considerable degree of carelessness in the underground workers.

Both the number and extent of the metal mines of the United Kingdom are much less than those of the coal mines, as is indicated by the comparatively small number of accidents. In these we find decreases in both accidents and deaths, in marked contrast to the coal mine results. In one respect the result was the same in both, falls of ground being the most important cause. From these falls there resulted 15, or 40.5 per cent. of the accidents, and 16, or 42.1 per cent. of the deaths. Shaft accidents were the only other special cause of any importance, 6 accidents—16.2 per cent. of the total—causing 6, or 15.8 per cent. of the deaths.

It is evidently with reason that Mr. Le Neve Foster, in his detailed report for 1899, called especial attention to the necessity for greater care in protecting roofs in underground workings, and suggested some measures which might be adopted to secure miners against that class of accidents.

Even in the quarries or open workings we find that falls or slips of ground were the chief cause of trouble, though their nature, of course, is somewhat different from that of falls in underground workings. From these falls or slips resulted 51, or 41.8 per cent. of the accidents and 53, or 42.4 per cent. of the deaths. The only other important item in the quarries was blasting accidents, a large proportion of which were due to carelessness.

The total result shows an increase last year of 97 accidents and 105 deaths, nearly all being in the coal mine list. The increase was due to a number of small accidents, and is not so discouraging as might appear at first sight, if all the circumstances of the exploitation of the mines are taken into account.

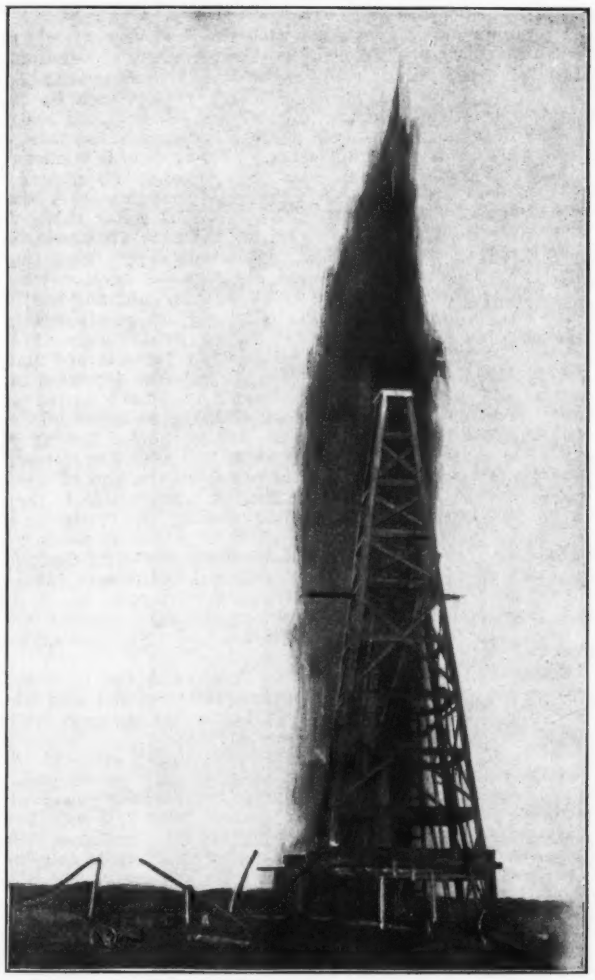
MEETING OF IRON MANUFACTURERS OF RUSSIA.—United States Consul Smith writes from Moscow, December 21st, 1900: "The Ministry of Agriculture has found it necessary to call a meeting of the iron manufacturers of the country, to consider the present crisis in the iron industry of Russia, as the majority of puddling furnaces and rolling mills are at a standstill. This serious state of affairs has attracted the attention of the Government, which will take energetic steps to uphold the iron manufacture of the country. Large quantities of iron ore have been exported lately to England."

THE BEAUMONT OIL FIELD, TEXAS.

Written for the Engineering and Mining Journal by William B. Phillips.

The discovery of the flowing oil well near Beaumont, Jefferson County, Texas, by A. F. Lucas on January 10th, 1901, has already passed into history. The news was telegraphed far and wide and received all the attention which could have been anticipated. Oil men from all over the country proceeded at once to Beaumont, and even at this time the town is full of prospectors, sightseers and would-be investors. It is difficult to secure accommodation in the town, and the overflow has been cared for at Port Arthur, 22 miles distant. A recent visit to the well and its immediate surroundings gave me an opportunity to observe on the spot just what the well was and what the circumstances are that prevail there at present. It is understood that Mr. Lucas will prepare for the Richmond meeting of the American Institute of Mining Engineers, February 19th, a statement covering such information as may be given out now, and I will not attempt to forestall what he may have to say. He is entitled to speak for himself, and certainly no one else knows as much about the matter as he does. The purpose of this article is of a general nature, while he will deal with particular facts.

It is nearly two years since he began drilling near Beaumont, about 4 miles a little east of south, on what is known as The Hills. This is



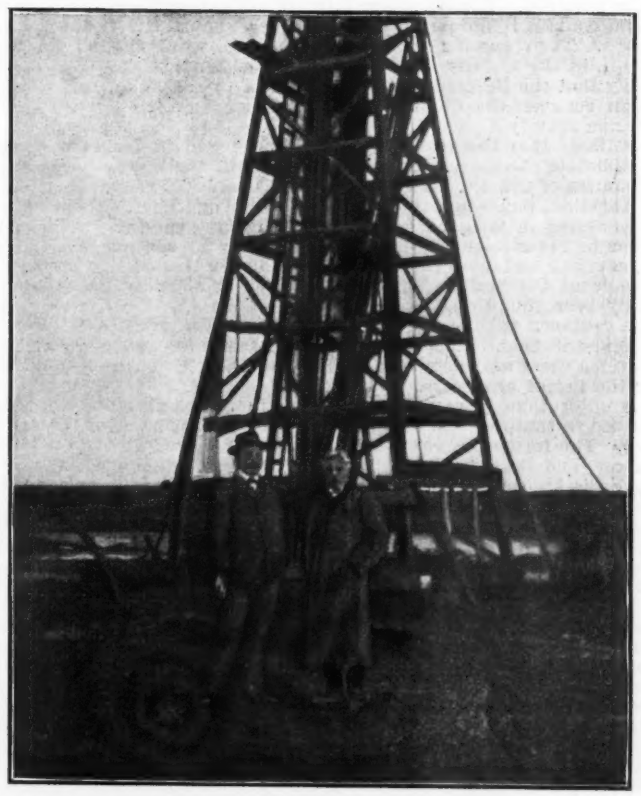
LUCAS OIL WELL, BEAUMONT, TEXAS.

the third hole he has down, but neither of the other two was drilled so deep as this one. The depth of the big well, which has kept Beaumont in a fever for two weeks, is about 1,300 ft. It has an 8-in. casing, and the oil comes up through a 6-in. pipe. The great flow was struck on the morning of January 10th, and continued without interruption until it was checked and the well closed on the 19th. It was certainly a wonderful sight. The column of oil rose into the air 150 ft. and continued spouting with regularity and steadiness vertically until the 14th, when a "T" was secured to the pipe and the flow diverted horizontally. The flow was variously estimated from 6,000 to 20,000 barrels a day. Until the oil can be piped into a tank and the actual flow measured with accuracy it cannot be known just what it is. Enough is known, however, to warrant the assertion that the Lucas well is the greatest producer on record up to this time. The first photograph shows the well on January 18th; the second shows the base of the derrick, with Messrs. Lucas and Galey in front of it.

Opportunity has been freely afforded numerous persons to assert with confidence that the oil comes from a huge reservoir in the earth; that it flows as a great stream from some undefined regions in the north, spouting out through the Lucas well near Beaumont, dipping underneath the Gulf of Mexico and re-appearing as asphalt in Trinidad. Many illustrations of just how the thing is have appeared in the daily press, and the authors have the satisfaction of explaining everything in the happiest manner. All that can be stated now is that the Lucas Well is a wonderful producer, that it was drilled to the depth of about 1,300 ft., and that the geological formation is Tertiary, and probably Neocene. As to further information we must wait. Other wells will certainly be drilled in the district, and in course of time we shall know more than we do now.

Jefferson County is a part of the great coastal plain of Texas which stretches inland from the Gulf for 100 miles or more with a gentle inclination seawards. The country in the immediate vicinity of the well is barren of trees and shrubs, a wide grassy expanse with a few inconsiderable elevations honored with the name of hills. The surface soil is black and greasy, extremely fertile and well adapted to the cultivation of rice, which is one of the staple products. The lands are irrigated for rice culture, and there are numerous canals and pumping stations. On the eastern side of the county is the Neches River, a deep and tortuous stream, but navigable for 450 miles from Sabine Lake, into which it flows. The town of Beaumont is immediately on this river and the Lucas well is about 3 miles from it in a straight line. Sabine Lake is a large and beautiful sheet of water, but the deepest soundings in it are not above 8 ft., except near the southern end where the ship canal enters and where the channel from the Gulf begins. As it is proposed to speak more particularly of the lake and the ship canal when referring to shipping facilities by sea, recurrence can be made to the geological conditions of this part of the State.

According to Mr. Robert T. Hill (Physical Geography of Texas, United States Geological Survey, 1900), the marine sedimenetary rocks in Texas are about 25,000 ft. in thickness and occur as strata of differing hardness, tilted at steep angles in the mountainous areas, and



LUCAS OIL WELL—BASE OF DERRICK.

nearly horizontal in the plains region. In speaking of the formations of the coastward slope from Cretaceous to recent age he says: "Most of these rocks were once marginal deposits of the Gulf of Mexico, laid down when it extended much farther inland than it does to-day; and they were elevated as the Gulf receded from the Rocky Mountain front to its present position. All these strata now incline toward the sea. In some instances the inclination coincides with the surface slope, while in others it is slightly greater. . . . The marine Tertiary and Pleistocene sediments are found only to the coastward of the later Cretaceous formations in the eastern and southern provinces, making, with portions of the later Cretaceous, the formations of the Coastal Plane. The Eocene Tertiary strata are mostly unconsolidated alterations of sand and clay, with exceptional local indurations of ferruginous sandstone. The latter marine sedimentaries of the Coast Prairie district (Miocene to Recent) have not been classified by age, but collectively they make a great thickness of unconsolidated sands and clays of late Tertiary and Pleistocene age. According to well borings at Galveston they are over 3,000 ft. thick. They produce a remarkably level topography—apparently a new plain lately reclaimed from the sea."

It would appear, therefore, that the Beaumont well has been drilled in marine sedimentaries which it has not yet penetrated, and that the oil may be derived from the decomposition of marine organic remains and from such terrestrial organic remains as may have found their way during Tertiary times into that part of the sea. Mr. Hill places the total thickness of the marine sedimentary rocks at about 25,000 ft. This, of course, does not mean that the oil-bearing portion of these rocks is of such a thickness. We shall have to await further developments before the exact thickness of the oil-bearing strata is ascertained, and

to collect and digest data derived from the drilling of other wells in the coastal plain. This work will be taken in hand by the mineral survey contemplated by the University of Texas, a bill for the establishment of which is now before the Legislature. The late geological survey, established in 1888, lapsed in 1892 from lack of appropriation. Since that time there has been no survey of the kind, and it is during the last few years that the oil industry of Texas has begun to be of importance. The following table will show the production of petroleum in this State since the statistics were first collected, in barrels of 42 gallons:

Year.	Bbls.	Value.	Year.	Bbls.	Value.
1889	48	$340	1895	50	....
1890	54	227	1896	1,450	....
1891	54	227	1897	65,975	$37,662
1892	45	225	1898	546,070	277,135
1893	50	210	1899	669,013	468,309
1894	60	....	1900	996,000	800,000

The production and value for 1900 are estimated, but it is believed that the figures are approximately correct. Including the Beaumont well for 1901 the production could be 4,000,000, and possibly 5,000,000 barrels. It is, however, too early in the history of the Beaumont field to make any predictions as to what it will add to the production this year. A pipe line will have to be constructed, storage tanks built and other arrangements made before the Lucas well, with all of its wonderful possibilities, will become an actual factor in the petroleum market. Analyses of the oil are not yet to hand, so that no positive statements as to its quality can be made. It appears to be of asphaltum base and to carry some sulphur, and its chief use may be found as a fuel oil. But it may also contain enough illuminating oil to make its recovery an item. In this case refineries will have to be installed, whether for the recovery of kerosene, naphtha, or what other ingredients may be obtained. The Corsicana oils are not altogether fuel oils; some of them contain illuminating oil and other comparatively low boiling products. Their specific gravity is about 0.85, while that of the Sour Lake oil, in the vicinity of the Beaumont field, ranges around 0.94. It is likely that the Beaumont oil will be found to occupy an intermediate position between the Corsicana and the Sour Lake oils, with respect to specific gravity.

It is likely that the discovery of the Lucas well in Jefferson County will stimulate the search for oil in all parts of the State, especially in the counties of Orange, Chambers, Liberty, Hardin, Tyler, Jasper, Newton, Angelina, San Augustine, Sabine and Nacogdoches. Some oil has been produced in Nacogdoches County for many years, the earliest operations in Texas having been in this county as far back as 1867 or 1868. Ten years ago and more there was a pipe line in this county connecting the wells at Oil Springs with the railroad at Nacogdoches. Oil has recently been found also in Starr County, near the Rio Grande River in the southern part of the State and 300 miles south a little west of the Corsicana field. Starr County belongs to the coastal plain and the formations there are such as to lead to the belief that it may some day enter the list of producers.

It is unfortunate just at this time that there are no State reports of much use to those who are interested in the development of the oil industry. The former survey went out of existence before the oil industry arose, and the new survey has not yet been established. Enough, however, is known of the State to warrant the opinion that it may become one of the greatest sources of oil. An immense area is known to be oil producing, although for the present the operations are for the most part confined to the counties of Navarro (the Corsicana Field), Nacogdoches, Jefferson (Beaumont and Sour Lake), and Bexar (San Antonio).

It is not unlikely that producing wells may be found generally in the area marked as the coastal plain, which extends for an hundred miles inland from the Gulf. Many dry wells and gas wells will be found, of course, as is the rule in every oil district, but this entire region will be prospected in course of time and its secrets brought to light.

The Beaumont Field lies favorably as regards shipping facilities, whether by rail or by sea. It is penetrated by the Southern Pacific and the Kansas City Southern Railroad, and there is a road from Beaumont to Galveston, a part of which, however, was badly damaged by the Galveston storm and has not yet been repaired. Beaumont itself, as already remarked, lies on the Neches River, a deep stream emptying into Sabine Lake. A branch of the Southern Pacific Railroad extends from Beaumont to Sabine Pass, a distance of 32 miles, where there is deep water. At this place there is now a storage tank for oil, holding about 37,000 gallons. From Sabine Pass last year there were shipped 97,376 barrels of petroleum, valued at $292,128, all of it going by sea to Philadelphia from J. S. Cullinan & Company, of Corsicana. Sabine Pass is a lumber exporting port, sending out last year for the coastwise trade 7,773,425 ft., and to foreign countries 47,758,882 ft. It also sent out 63,455 bales of cotton, 779,677 bushels of wheat, 72,973 barrels of flour and considerable quantities of cotton seed meal, etc. The total value of its imports and exports was $4,761,531, of which the imports, however, represented a value of only $17,481. The average tonnage of the cargo vessels was, for sail, 565, and for steam 1,505.

Sabine Pass is at the head of the channel connecting Sabine Lake with the Gulf, and the depth of this channel, at mean low water, varies from 24 to 43 ft. It is four miles from the town to the inner end of the jetties and the jetty system extends for 1½ miles further. The old town was visited by a destructive flood in 1886, and almost washed out of existence, but it suffered little damage last year from the Galveston storm.

But Sabine Pass is not the only town which will furnish shipping facilities for the new oil field. Port Arthur, the southern terminus of the Kansas City Southern Railway, will also bid for the business. It is located on the western side of Lake Sabine and is 786 miles from Kansas City. The Stillwell Ship Canal was designed to connect Port Arthur with deep water at Sabine Pass, but stopped short of the town about 3 miles, at the grain elevator. This ship canal has a width at the top of 180 ft., with a bottom width of 100 ft., and it carries 25 ft. of water. Vessels of considerable tonnage can come up from Sabine Pass through this canal under their own steam. Up to December 6th, 1900, the largest vessel to come up was the "Athena," net tonnage 3,190. The canal is about 7½ miles long and follows the western shore of the lake. It was excavated in the soft material comprising the swampy and low grounds of that part of the country and its sides are unprotected. From February 4th, 1898, to December 6th, 1900, the total value of the exports from Port Arthur were $7,345,169, and of the imports $2,470,937, making a total of $9,816,106. Business was transacted with Liverpool, Rotterdam, Antwerp, London, Hamburg, Bremen, Havre and Plymouth across the sea, and with Mexican ports across the Gulf. There is a project on foot for having a channel dredged out in the lake, probably from the mouth of the Neches and the Sabine rivers to deep water at the Pass. Sabine Lake occupies a rather peculiar position, lying between deep water in the Neches River and deep water at the head of the channel. Soundings in the river near its mouth show 20 and 23 ft. of water and at the head of the channel at Sabine 24 ft., while the lake itself, as already remarked, rarely shows as much as 8 ft. The bottom of the lake is from 12 to 15 ft. above the bottom of the river and from 15 to 18 ft. above the bottom of the channel at Sabine. The lake is 13 miles long from northeast to southwest and about 7 miles wide in its widest part. Without a deep channel, dredged and maintained, it is incapable of supporting any considerable commerce. As the terminus of the Kansas City Southern Railway Port Arthur may become an important shipping point, but during the last few years it has not fulfilled the hopes at one time entertained with respect to it. Doubtless the discovery of the Beaumont Oil District, lying within 18 miles of the Port with a possibility of further extension to the southward, will improve its prospects.

There is a circumstance connected with the discovery of oil in this part of Texas that deserves a passing notice. It is the reported outflow of oil in the Gulf a few miles west of the end of the Sabine jetty. There is a so-called "oil pond" in the Gulf which vessels seek in stormy weather, and some will have it that oil comes up through the sea there. The testimony of oil men who have personally investigated this report is to the effect that it has no foundation. This opinion is confirmed by that of pilots and seafaring men who are intimately acquainted with that part of the Gulf. All agree as to the quiet spot in stormy weather and they offer the explanation that the depth of water there varies from 9 to 15 ft., with a soft, black mud for bottom. This mud, which contains more or less of the products of decomposing organic matter, becomes stirred up by the waves and rises to the surface where it spreads out and acts to some extent as oil does in subduing the turbulence of the sea. Samples were collected at various points within the so-called "pond" and were examined for oil, but yielded none. We may have in this locality an illustration of how oil deposits are made in the course of time, by the decomposition of material deposited on the bottom of shallow seas, covered with sediments and finally buried to considerable depths. One fact in connection with the so-called oil "pond" militates against the statement that it is due to the out-flowing of oil. The "pond" is slowly changing its location and traveling toward the east. Some years ago it was much farther from the end of the jetty than it is now, and it is quite possible that the construction of the jetty has had a good deal to do with its restless moods. The "pond" is about 2½ miles long by ¾ mile wide. This, of itself, would do much toward demolishing the oil theory upon which so many beautiful descriptions have been based of late. It is a fine idea that the oil comes down from the northwest as a great underground stream, is tapped by the Lucas well, and breaks forth in the Gulf as a vast sub-marine spout, enough of it, however, being left to go on to Trinidad and afford the asphaltum so much coveted!

In the meantime, and while many are busy with the theories that are to explain the origin of this oil, whence it comes and also whither it goes, it would be best to withhold a final opinion until more wells are drilled and more data collected and digested.

ALUMINUM CONDUCTING WIRES.—An electric power plant has lately been completed near Naples in Italy, from which power will be transmitted over three different lines, respectively 2, 3 and 9 miles long. The conducting wires will be entirely of aluminum. Signor Silvio Piccoli is engineer of the company, and the work is done by the Allgemeine Electricitats Gesellschaft, of Berlin, Germany.

COAL IMPORTS IN ITALY.—The total imports of coal in Genoa last year amounted to 2,455,623 tons, the largest quantity ever imported at that port. This compares with 2,356,046 tons in 1899, the next largest quantity; in 1890 the total was 1,496,232 tons. A special feature in the imports last year was the receipt of 93,147 tons from the United States; in 1899 only 18,138 tons were received from that country.

ELECTRIC HAULAGE ON CANALS.—The success of electric traction long since suggested the possibility of supplanting old methods of haulage on canals, and the work of experimentation has been assiduously followed up for years, says the "Electrical World and Engineer." There is every reason to believe that in the near future electricity will have supplanted all antecedent methods wherever there is sufficient traffic to justify the resort to mechanical power. There are virtually three methods now competing among themselves for adoption, and each of these has peculiar merits of its own. There is the trolley system with wires along the bank and the motor on the boat. There is the trolley system with the motor traveling along the bank, either on the plain towpath or on a special narrow-gauge track. There is the automobile system in which a tractor carrying its own batteries or aided by batteries on one of the boats, does the work independent of any live current from a line wire. Perhaps we ought to include the method in which the boat driven by electric motors picks up a chain lying along the bed of the canal, but this system appears to have no vogue, and seems hardly likely to be adopted on an extensive scale in the future. The data as to the work done by electric automobiles would justify considerable confidence in the economical successes of that method, especially if cheap current be available for charging the batteries; while on the other hand the present rapid extension of long-distance, polyphase circuits would warrant the belief that many canals may soon be operated in that fashion from stations widely apart.

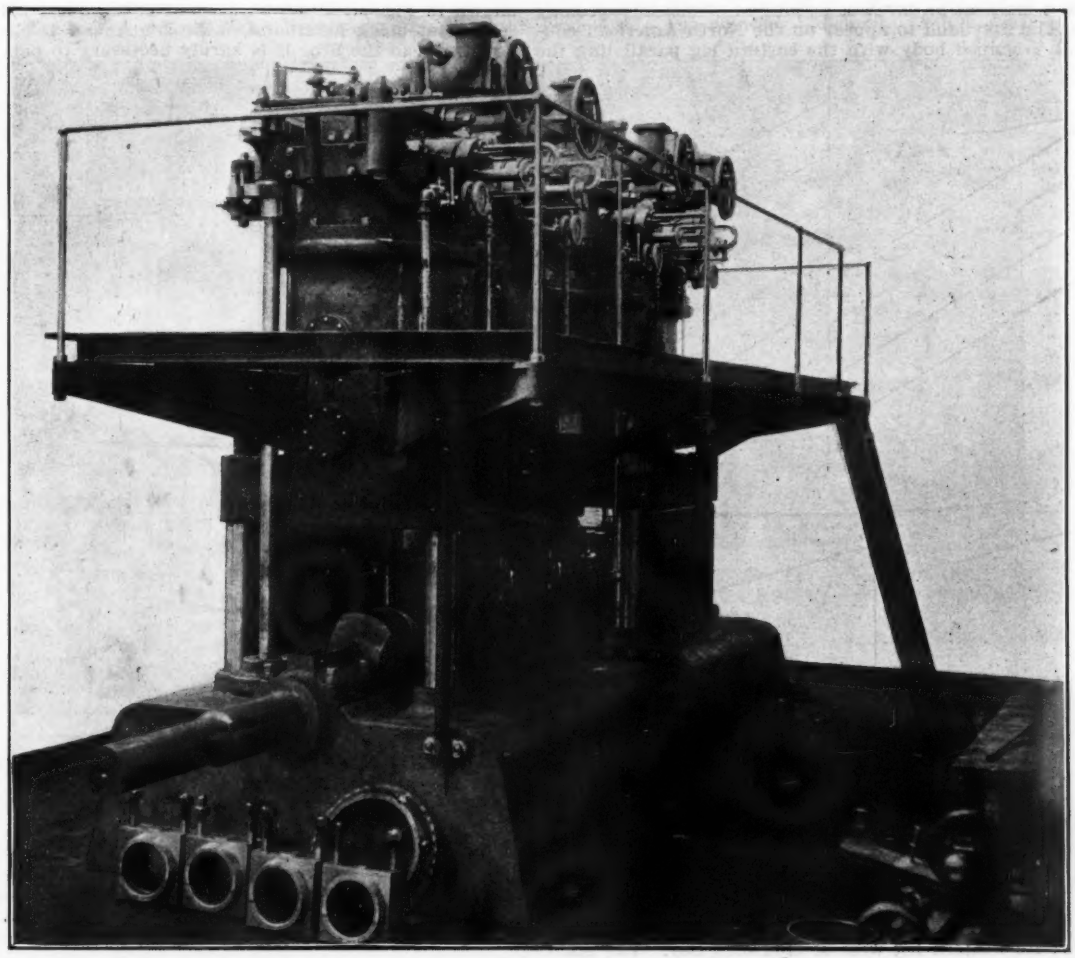
A LARGE GAS ENGINE.

The accompanying illustration shows a gas engine recently completed by the Union Gas Engine Company, 247 First Street, San Francisco, which is the largest gas engine ever built on the Pacific Coast, and, with a very few exceptions, the largest in use in the United States. The engine is of the upright type and has four cylinders, placed side by side, as shown in the photograph. The engine has developed 350 brake horse-power. The space occupied is 24 ft. in length, 8 ft. in width and 12 ft. in height, and the total weight is 100,000 lbs. This engine was built for the San Francisco Gas and Electric Company, and will drive an electric generator directly connected. The general design, which is shown by the photograph, is an excellent one, and the engine is expected to do good service.

THE ORIGIN OF VEIN CAVITIES.

Written for the Engineering and Mining Journal by Frank L. Nason.

If at the outset we define our understanding of the much-abused term "vein," we will rid ourselves of many difficulties. Originally veins mean the channels through which the blood circulates in the body; by analogy, they are the channels by which water, vapor or gases circulate through the rock crust of the earth. These channels are as apart from their filling as the veins of an animal are from the blood they carry.



UNION GAS ENGINE COMPANY'S 350 H. P. GAS ENGINE.

If it is remembered that channels or cavities must be formed after the rocks themselves are formed, the great confusion often arising from the indiscriminate use of "veins" and "beds," as applied to ore deposits, will be avoided. In other words, veins of whatever kind or nature are always secondary, and are the very antipodes of bedded deposits which are primary or contemporaneous in their origin with their enclosing rocks.

There are certain classes of secondary deposits which so closely simulate primary deposits as to be with difficulty distinguished from them, such as contacts, especially between sedimentary beds, but these will be discussed in their turn.

Fissure Veins.

In spite of the vast amount of trouble which the term "true fissure," as applied to veins, has caused and the still unsettled state in which the term exists, it is one very easily defined and, in general, almost as easily recognized by a trained observer. It is simply a parting plane in the rock crust, extending downward at varying angles, to unknown but supposedly great depth. In other words, a true fissure must be a fault plane. A fissure can exist and extend downward to profound depths in bedded or stratified rocks as well as in eruptives. There is, however, this difference. In stratified rocks the faulting or displacement is generally plainly visible, since the adjoining strata do not match (see Fig. 1); while eruptive rocks, being homogeneous, neither the amount of the displacement nor its direction can ordinarily be observed. The extent of a fissure in depth and longitudinally is variable, or may be so. In depth a fissure is limited by the rigidity of the rock, whether stratified or eruptive. For example, in the case of eruptive rocks, differential rock movement resulting in a fault might take place in an eruptive while it was still plastic from heat. In this case the fracture would show only on the outer or solidified crust. The depth of visible fracture in this case might vary from several hundred to as many thousand feet in depth. In case of stratified rocks, a profound fracture might not show (a) in case the surface rock was of a soft, friable nature, or (b) in case the soft rock was covered by a series of more rigid rocks. Mr. T. A. Rickard cites a case in point at the Enterprise Mine, where the well-defined fissure vein ends abruptly in a bed of soft carbonaceous shale.

Further illustrating the above point, we can imagine a column of granite or marble blocks built to such a height that the basal block would be crushed by the superincumbent burden. It is no less true that the weight of the earth crust on underlying rocks is sufficient to crush them and thus to prevent any cavities being formed by disruptive or faulting forces. There is still another factor to be considered in limiting the depth to which a fissure may extend. Within the limits of actual experience the earth's temperature increases 1° F. for every 55 ft. of depth. This is not universally true, but it is practically. At this rate of increase, assuming a mean annual temperature of 70°, water would boil at a depth of 7,810 ft. Heated water under pressure reduces the rigidity of rocks, makes them more plastic. It is, therefore, extremely doubtful if, in general, it is possible for a distinct fissure to exist at a depth greater than from two to four miles. We can, however, imagine that an open fissure having been formed through the outer crust of the earth, mineral deposition might, and probably would, take place below the open fissure and practically the vein filling, in the form known as segregations, continued to a greater depth. This, however, belongs to another subject.

Without going to extremes, a fissure practically reaches to the depth where the superincumbent pressure causes the rocks to flow or creep, thus filling any cavity either natural or artificial. "A priori" reasoning shows this to be a warrantable conclusion as to the depth to which fissures can extend. Practically, mining operations are often hampered and occasionally prohibited by the tendency of the walls to "flow" or "creep."

Lateral or Horizontal Extent of Fissures.—At first thought it might seem that a fault or fissure plane would be unlimited horizontally. A study of the causes of faulting readily shows the errors of such a conclusion. Rocks are, in the first place, not perfectly rigid. They are capable of compression to a certain extent. Farther, intense strain of tension or compression at any one point may cause fracture and displacement at that point with a series of more or less pronounced rolls away from the yielding point, or the strain may be so slight that it may be perfectly balanced by incipient folds without fracture. There are

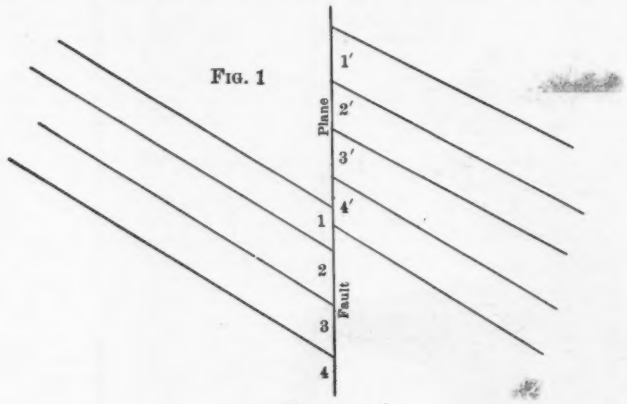
instances of fault planes of great extent, the Mother Lode of California, the London Fault in Colorado and others, but minor faults of one mile, more or less, in length are of far more frequent occurrence. For convenience in reference we may use the terms major and minor faults. Major faults nominally stand in a class by themselves as to their cause, while minor faults or fissures may owe their origin to several distinct though allied causes. Primarily, of course, both are referable to the same cause, viz., the loss of earth heat by radiation and a consequent shrinking and adjustment to new or constantly changing conditions. Considering major and minor faults under separate captions we will arrive at their points of similarity and difference.

Major Faults; Factors Determining Their Direction.—In Western North America the general direction of great fault lines lie in the northwest and southeast quadrants. Or to put the same statement in common parlance, the veins of this section have a northwest-southeast strike. In the Atlantic States veins, as well as outcrops of bedded deposits, lie, generally, in a northeasterly-southwesterly line.

Among many, so strongly is this dictum grounded, no vein in the east nor in the west is considered worthy of exploitation unless it conforms to these lines. Aside from knowledge gained from limited experience there is a solid scientific basis for this belief, although, as will be shown later, there are equally good reasons why fissures should, as they actually do, extend horizontally in any direction.

If we return for a moment to our first lessons in elementary geology we will recall that the first land to appear on the North American continent was a small V-shaped body with the eastern leg paralleling the

Fig. 1



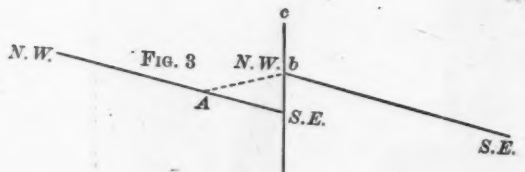


Fig. 3

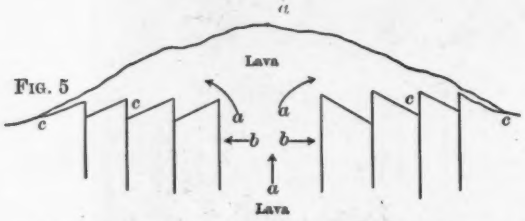


Fig. 5

St. Lawrence River; its western leg west of Hudson's Bay. The point of the V is the area of the great lakes. Flanking this V are two other areas, that now occupied by the Allegheny Mountains on the east and the Rocky Mountains on the west. The legs of the V and the flanking areas have respectively a NE.-SW. and a NW.-SE. direction. Following the development of the continent through its sucessive stages of emergence, we find that the parallelism to the original V has been maintained to the present day. The trend of the Rocky Mountain system beginning at the Arctic Ocean is southeasterly, while that of the Appalachian, beginning at the same ocean, is southwesterly. Without going into elaborate detail, it will be sufficient to point out that the alignment of these mountain systems has been along lines laid down in the dawn of the earth's existence, and that there has been little or no deviation from them during the earth's subsequent history. These lines represent lines of least resistance and along these have subsequently arisen the great mountain systems referred to. The falling in of the earth's crust over large areas, due to loss of heat and consequent shrinking, have forced up the mountain's areas with consequent foldings or wrinkles, as well as fracturing. In a more or less plastic state these wrinkles would be accompanied by neither rupturing nor displacement. But in the case of even our most plastic rocks the rigidity is too great and the result is faults or fissures extending to great distances horizontally and to profound depths. Hence we can see why the eastern prospector for iron or coal looks for northeasterly strikes for his bedded outcrops, while his western brother pins his faith to the northwesterly strike of his veins.

To sum up briefly, our mountain ranges are the results of lateral compression from east to west; these ranges represent lines of least resistance; along these lines, at right angles to the compressing forces, profound fracturing has occurred, and these lines of fracture are but fissures or veins. Lest confusion arise, it is again pointed out that fissures and veins are practically one and the same and must be kept wholly separate from the subsequent vein-filling.

While it is true that the main direction of our major faults will lie in the directions indicated, it is equally true that they may lie along lines at right-angles to these or nearly so. Either one of two distinct factors may act independently to produce the above result, or both may act in conjunction to the same end.

In the first place, rocks are neither homogeneous in structure nor in rigidity.

In the second place, the forces of compression may not advance in an even line. In either case, or with the two combined, the result would be the same—a yielding along a line at, or nearly at, right-angles to the original line. (See Fig. 2.) Let the broken line NW.-SE. represent a section of the main axis of a mountain range, and the arrows a-a, b-b represent the direction of the compressing forces. Then if the rocks were perfectly homogeneous and the opposing forces completely balanced a uniform ridge, or, if the strains were in excess of cohesion, a fault line would be the resultant. If, however, the rock crust along the line c-d was less rigid or the forces a-a, b-b were not equally balanced a fracture or fissure would follow along the line c-d, in addition to the original fault NW.-SE.

Moreover, this fissure or fracture would be plainly manifest, as shown in Fig. 3. Here, on account of the fault c-d, the line NW.-SE. instead of being horizontal, is broken at c-d and each section pitches downward to the SE. It is hardly necessary to point out that a simple

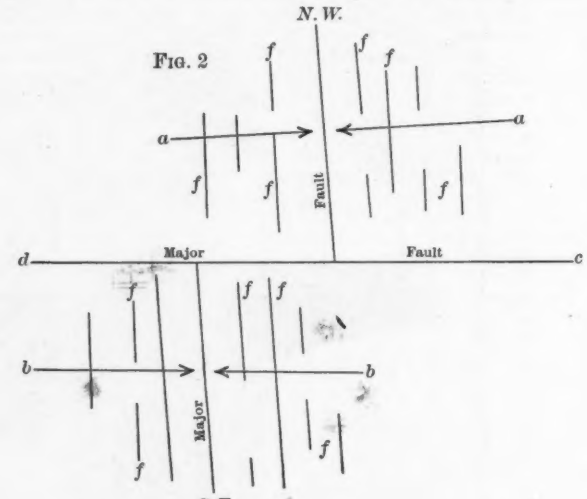


Fig. 2

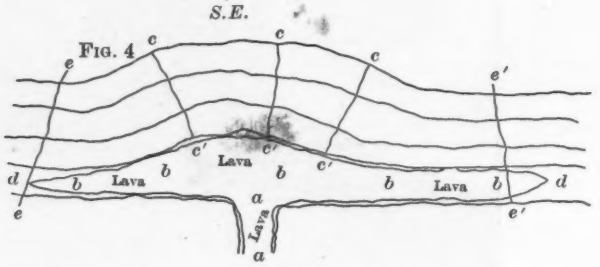


Fig. 4

Fig. 6

shear might be the result with no vertical displacement; but, as a matter of fact, this does not commonly appear except on a small scale. Again, it is possible to refer this fault line to forces acting from the north toward the south. If one calls to mind that there is a low divide stretching from the east across the continent, indicated by the St Lawrence, Hudson, Mississippi and Red rivers, flowing practically north and south, or nearly so, from a common incipient divide, it will seem that a second line of compression has been established. Really such is the fact, but it is so feebly marked in comparison with the Atlantic and Pacific mountains that it is here left out of account.

That the axes of mountains are thus broken and pitched from the horizontal is patent to even the casual observer. In the Allegheny Mountains the larger and gentler slope is to the northeast; the shorter and more abrupt slope is the southwest.

In conclusion of the above it may be pointed out that major faults follow lines either parallel to mountain systems or at nearly right-angles to them.

Minor Faults.—If the writer has expressed himself clearly in the above, the reader will have little trouble in picturing to himself the great elevated plateau from which rise the ranges of the Rocky Mountains' system, springing abruptly from the Pacific Ocean and extending eastward nearly one thousand miles. He will further recall that this mountain system is not one great continuous wave, but that it is broken up into a series of more or less independent ranges with their axes swinging between the north and west. These minor ranges are but the resultants of the two forces, that of lateral compression (mountain forming forces), and the resistance to this compression due to inertia of the mass and the rigidity of the rock crust. We cannot

imagine these forces, for reasons pointed out, being confined exclusively to parallels or right-angles to these parallels, but rather, under intense compression, dissipated, in a less degree, in other directions. In other words, rupturing will be manifested by minor faults which may extend at any angle from the two main lines of fracture, northerly and southerly and easterly and westerly. These minor faults or fractures may, in a way, radiate from a given center, or they may align in a series of parallels, but in either case they will be comparatively limited in extent.

Radiating fissures may occur through volcanic agencies. Volcanoes are always characteristic of younger mountains. In the older mountain systems, where there is little rock movement, owing to an equilibration of earth movement and resistance to it, volcanic action is wholly absent. It will only be necessary to point out the following facts to make the above statement clear. The Atlantic mountain system from the Arctic to the Atlantic Oceans in the western hemisphere consist almost wholly of Archaean or Cambrian rocks. In these volcanoes are wanting. On the Pacific Coast, on the other hand, from the Arctic to the Antarctic, the Rocky Mountains and the Andes consist principally of the younger Paleozoic rocks, reaching up, in many instances, to the Cretaceous. Along this great mountain range is an almost unbroken line of active volcanoes.

Volcanic agencies may then be assumed as one cause of radiating fissures, but there is yet another which is just as fruitful. The great pressure on the molten rock which, in places at least, underlies the solid rock crust, in some places forces this molten rock upward, in some instances forcing it through the overlying rocks in great lava flows, or in others simply pushing up the overlying rocks in a dome-shaped mass whose interior is filled with the intrusive. Whether the molten rock was forced through the outer crust or remained imprisoned within the dome the result would be the same, a series of fissures of limited extent horizontally radiating from the center of disturbance. (See Figs. 4 and 5.)

While the above agencies may under certain circumstances produce step faults (Fig. 5), these can more commonly be assigned to the great mountain-making forces shown in Figs. 1 and 2. As has been pointed out, we canot imagine the strain to be confined wholly to the two lines NW-SE. and c-d, but will die out in parallels to those lines in step faults of diminishing displacement. (See Figs. 1 and 6.) To sum up briefly the points of resemblance and difference between major and minor faults, both are the results of the shrinkage of the earth, both must of necessity reach to profound depths.

Major faults are persistent and regular in direction, following mountain axes. Minor faults, on the other hand, are limited horizontally and may extend in any direction. The width of the fissure is also less.

(To be Concluded.)

CEMENT TRADE IN GERMANY.—The correspondent of the London "Economist" says that the two German cement combinations, the Hanover and the Lower Elbe Syndicate, are fighting each other by cutting prices, and the independent factories are taking part in this war of prices. It is stated that one of these factories outside the syndicates has been selling cement, free on board, at Stettin, at $1 a barrel, at which price it must lose at least 25c. per barrel. Cement factories have increased so rapidly in Germany during the past few years of prosperity that the capacity of the industry is now far in excess of the country's demands. The establishments of the chief syndicate, the Hanover Syndicate, have alone a capacity of over 15,000,000 bbls. annually. It is admitted, therefore, that no permanent help can be found, except by increasing the export business.

THE TRUCKEE RIVER ELECTRIC POWER PLANT.

The application of the induction motor to mining machinery is comparatively speaking an innovation, the development of this form of power apparatus dating back not further than the last decade. The most recent instance of the use of electric machinery for mining purposes is afforded by the case of the Comstock Lode. Formerly the mining properties on this lode were operated by steam obtained by the use of wood fuel. On account of the excessive cost of wood in that vicinity, this method was very costly; and ordinarily the milling has been done in recent times at a distance of some 15 miles from the mine property, on the Carson River, where relatively cheap water power could be obtained. A limited amount of water power was obtained, however, at the mines, by a 40-mile flume. This, however, has also been very costly.

Recently, a company was formed to furnish electric power derived from turbines supplied with water-power from the Truckee River in California, the power thus developed being transmitted to the Comstock properties. This new electric company, located at Floriston, Cal., has already an extensive plant in operation. A dam of timber crib work filled with rock and sheathed with 4 in. of plank has been built, having a length of 142 ft. and a height of 7 ft. Five head gates pass the water thus dammed up into a canal excavated close beside the river, 600 ft. long and from 20 to 100 ft. wide. This forms a settling pond, and from it the water enters the flume through a screen. This flume

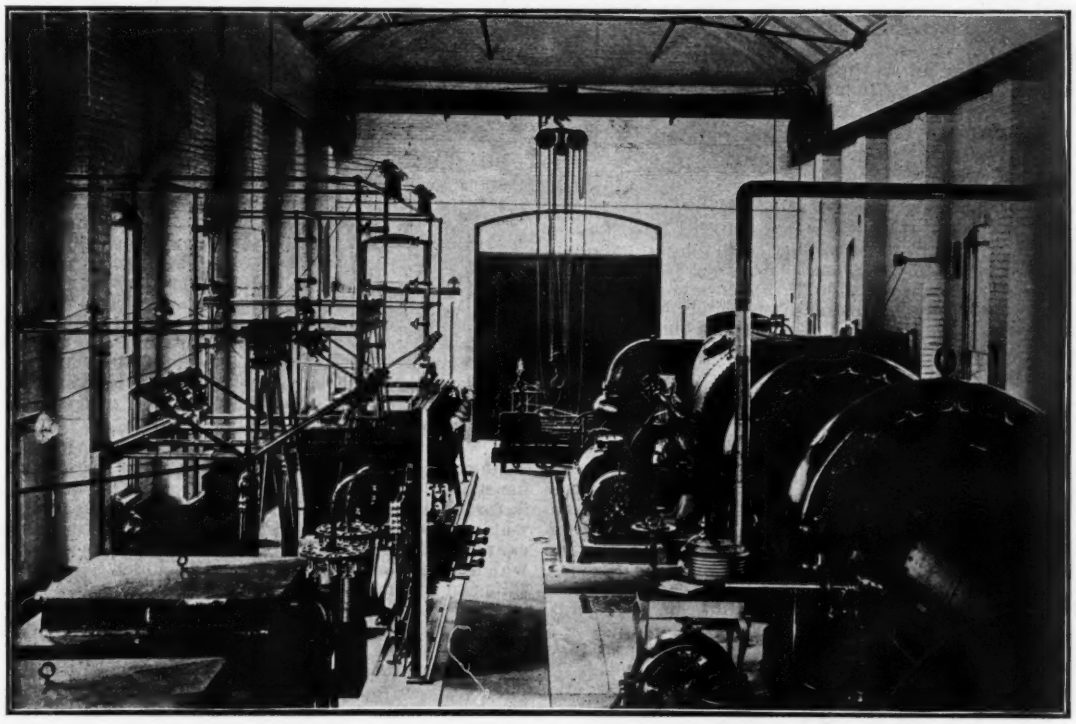


FIG. 1.—TRUCKEE RIVER ELECTRIC PLANT. GENERATORS AND HIGH TENSION SWITCHES.

is 8,600 ft. long with cross sectional dimensions of 6 ft. 8 in. and 10 ft. in the clear. At intervals spill gates are fitted, by means of which the flume may empty quickly in case of accident. The penstock, measuring 36 by 20 ft., is of heavy pine braced with ¾-in. iron rods. It is divided by a bulkhead, and from one of the compartments two pipe lines are run. These are 6 ft. in diameter and 160 ft. in length, built up of redwood staves, bound with strong steel bands, the joints between the abutting ends of the staves being made by means of metal tongues which are fitted into slits in the stave ends. At a point a few feet from the power house the wooden piping terminates in steel pipes, which are continued into the station and riveted to the wheel casings.

The power house, located close to the river bank, is a brick building 88 ft. long by 31 ft. wide. Its foundations are of concrete, the roof is of corrugated iron, supported on steel trusses and purlins. An overhead crane spans the interior. Here are installed two pairs of 27-in. horizontal McCormick turbines, each pair developing 1,400 H.P., running at 400 revolutions per minute, under a working head of 84¼ ft. The wheel casings are of heavy plate steel and heavy brackets are bolted to the wheel case and similar brackets to the beams which sup- 20-ft. length of draft tube leading to the tail-race, which it enters at port the turbines. To the center of each wheel casing is riveted a an easy angle. Lombard governors are used for operating the gates, and Ludlow balancing valves are used. When the gate is closed by means of the Ludlow mechanism a valve is opened into the tail-race, by which means an approximately uniform velocity of flow is maintained in the pipes. By this means a much closer regulation is maintained, as the inertia of the volume of water in the pipes does not have to be reckoned with, and water not thus diverted would otherwise be wasted by overflowing the dam.

One 750-Kw. Westinghouse 3-phase 500-volt generator is direct-connected to each pair of wheels by means of a flexible coupling. The generators are also adapted for direct connection, together by means of an adjustable coupling, so that both machines may be driven, if necessary, from one set of wheels. The flexible coupling between the

generator and water wheels is a very ingenious design, worked out by the Westinghouse engineers, and now largely used throughout the West. Two 22½-Kw. multipolar exciting machines are run by separate turbines operating at 1,000 revolutions per minute. Either one will excite the fields of both machines. Thus, there is always one machine in reserve.

The 500-volt output of the machines goes to a switchboard of three panels, one being used for the exciters, the other two for the generators, by means of which either generator may be connected to a set of three oil insulated 22,000-volt transformers. From the high tension side of the transformers leads run to high potential switches. All high potential wires are run on glass insulators, and the switches are arranged so that either or both sets of transformers may be used on either of the two 3-phase transmission lines, or both sets may be operated in multiple. After leaving the high-tension switches and lightning arresters, the two 3-phase circuits go through an aperture in the power house wall to the pole line.

Redwood poles 11 in. square and 30 ft. long, tapering to 7 in. square at the top, are used. Lock insulators carried on eucalyptus pins are borne by cross-arms. The three wires receive one complete turn of transposition in a length of 150 poles. In this way the current is carried on poles 130 ft. apart for a distance considerably over 30 miles, the size of wires being calculated to limit the transmission loss in voltage to 10 per cent.

At Virginia City a sub-station is erected for supplying the Consolidated California & Virginia Mine. By means of transformers 3-phase current is transmitted to the mines at 2,200 volts. The sub-station is similar in design to the main station, but is smaller. Here are also installed recording watt-meters. A loss of 4 per cent. between the sub-station and the mines is allowed. The mines are being driven by electric hoists driven by 200-H. P. induction motors geared to the hoists. Motors are connected to the air compressors by means of belts, while current for the underground stations is taken down the shaft to the 1,800-ft. level by means of a lead-covered cable.

Six induction motors are installed in the 100-ton grinding and concentrating mill, and here the ore from the Gould & Curry mine is brought by an electric trolley line. This line operates by direct current which is derived from a generator driven by a belt from an induction motor. Electricity is also to be applied soon to the pumping machinery in place of the present jet system. The accompanying illustrations give a further idea of the magnitude of the electric installation. Fig. 1 shows the Westinghouse generating sets and high-tension switches. Fig. 2 shows one of the large McCormick turbines, with an exciter driven by a small turbine in front; Fig. 3 shows one complete generating set.

BLAST FURNACE SLAG AS A FERTILIZER.*

By Alexander D. Elbers.

It may be considered as an axiom that it is much easier to introduce something that is entirely new in a technical sense than to revive an abandoned device on the plea of recent improvements in processes of production or of the product itself. The reasons are that the managers of large business interests have, usually, little time and still less inclination to thoroughly investigate projects that do not appear on their face to be of vital importance to them, that their views on such matters are generally derived from hearsay, and that the latter is more apt to be founded on the indistinct recollections of the previous failures that led to the abandonment of the scheme than on a correct knowledge of the changed conditions that may render it later a complete success. How far this applies to the subject under consideration may be inferred from the following extracts from the pamphlet of Charles Wood, of Middlesborough-on-Tees, on the "Utilization and Properties of Blast Furnace Slag," published in the year 1882. In speaking of blast furnace slag for fertilizing, Mr. Wood says:

"A material containing so much lime, silica, alumina, sulphur and magnesia, in a condition like the white soft slag sand, suggested its application as a fertilizer for some kind of land. Three years ago, through the kindness of Earl Cathcart, it was brought before the Royal Agricultural Society, and Dr. Voelcker reported 'that the result of his examination shows that it may be usefully employed upon moorland and peaty soils as a cheap and effective substitute for lime.'

"Since this report was made many hundreds of tons have been sold for this purpose, and, although there was only 32 per cent. of lime in the slag supplied, the results have been very satisfactory, particularly on land growing potatoes. Had it been Bessemer slag, containing from 40 to 50 per cent. of lime, there cannot be a doubt that the results would have been still more satisfactory, and the author feels sure that it must, in some localities, find a large outlet for this purpose."

Since the above was published, our knowledge of the physical as well as chemical behavior of slags has considerably improved. Mr. Woods' suggestion that the more calcareous Bessemer slag would give better results than that which he used—which was of the ordinary Cleveland type, comparatively low in lime and very high in alumina—was, of course, entirely correct; hence one might expect that similar experiments would have been made in the Western part of the kingdom, where the more suitable slag is made. Whether this has been done the writer does not know; but if slag manure had become a lasting success we certainly would have heard more about it; hence it may be presumed that there must have occurred some hitch. The object of this paper is to explain the reasons that may have led to failure.

In speaking of "white, soft slag sand," Mr. Wood meant granulated slag. When slag of the kind referred to is flushed in a small stream into running water, it breaks up into solid angular particles of a rather dark appearance; but when flushed into a stagnant pool or when brought into contact with water in any other manner which involves a copious generation of steam it breaks up into rather spongy particles of a light color, and this is what Mr. Wood called a white, soft slag sand, which does not, however, imply that its molecular density is any less than that of a piece of the same slag hardened on the dump. Such slag sand may do well enough on moorland and other extremely acid soils, but even when containing 40 or 50 per cent. of lime it will hardly answer as a substitute for lime on ordinary farming land, because it is not sufficiently soluble to decompose as readily as desirable. The only practical way of rendering such slag still more soluble is to reduce its molecular density, and that can only be done by keeping it so long in the molten state, and under such conditions, that it becomes disintegrated by its own heat. That this can be done at a trivial expense, as described in a previous article in the "Engineering and Mining Journal," November 3d, 1900.

* Abstract of article in "American Manufacturer," Pittsburg.

LAKE RATES ON IRON ORE.—The Cleveland "Marine Review" from an examination of the records of the different companies, computes the average rate on all iron ore moved from the ports at the head of Lake Superior—Duluth, Superior, Two Harbors and Ashland—during the season of 1900, at $1.2068 per ton. This rate is somewhat under 0.15 cent per ton-mile.

SICILIAN BRIMSTONE INDUSTRY.—In 1900 the exports of brimstone aggregated 557,668 long tons, as against 479,031 tons in 1899, showing an increase of 78,637 tons, or 14.1 per cent. in the past year. The movement in 1900 is classified by Emil Fog & Sons, of Messina, as follows: United States and Canada, 162,233 tons; France, 103,647 tons; Italy, 101,073 tons; United Kingdom, 23,973 tons; Germany, 28,702 tons; Scandinavia, 22,681 tons; Russia, 22,090 tons; Austria, 21,594 tons; Greece and Turkey, 19,647 tons; Holland, 18,595 tons; Belgium, 9,721 tons; Spain, 6,187 tons; other countries, 6,810 tons. The largest increases in exports, as compared with 1899, were to the United States, Holland and Scandinavia. Stocks in Sicily on December 31st, 1900, were 221,204 long tons, as against 277,098 tons in 1899, and 248,023 tons in 1898.

BUYING UP THE WOODEN SHIPS OF THE LAKES.—During the present week Mr. J. C. Gilchrist, of Cleveland, has added seven more vessels to his fleet—six steamers and a schooner, says the Cleveland "Marine Review." Five steamers and the schooner, represent the wooden fleet of the Wilson Transit Company, upon which Mr. Gilchrist has had an option for the past 30 days. The purchase price was $300,000 cash. The "Wallula," built in 1883, is the oldest, and the "Yukon," built in 1893, is the youngest. The purchase price is considered reasonable. The seventh vessel purchased by Mr. Gilchrist is the steamer "Charles A. Eddy," which was bought from Captain Boutelle, of Bay City, for $70,000. The "Eddy" was built in 1889. With the eight steel steamers building, Mr. Gilchrist controls a fleet of 42 vessels that are capable of carrying in a season about 2,500,000 tons of freight.

A FIRE-EXTINGUISHER FOR COAL CARGOES.—A machine for extinguishing fires in ships' holds recently introduced into Great Britain depends for its action on the generation of sulphurous acid gas, which is forced into the chamber in which the conflagration has occurred, and which, by replacing the air, so vitiates the atmosphere that combustion cannot continue. The machine consists of a generating chamber, into which air is forced by a fan, and in which a store of sulphur is placed. This can be simply ignited by throwing upon it a piece of burning waste. The gas thus generated is forced into the chamber, and after a while extinguishes the flames. Attached to the apparatus is also a condenser, by means of which, the fire once extinguished, the gas is passed through and through the chamber as it cools, until the materials which have been burning are reduced to such a temperature that they do not burst into flame when the air is at length introduced. This is brought about by a gradual process.

WATERWAYS IN GERMANY.—A new bill has been introduced in the Prussian Diet, which not only brings forward again the Midland Canal plan, defeated in 1899, but makes some important additions to it. The new bill provides for the Midland Canal connecting the Rhine and Elbe, with the same general features as two years ago; and besides this, the projected canal between Berlin and Stettin, which has been much talked of for years, is added. Another important addition is the improvement of the Warthe, and a canal connecting it with the Vistula. The tide-water course of the Oder will be subjected to large improvements, and the upper Oder above the Oder-Spree Canal will also be improved. The Spree and the Havel, finally, will be made navigable for the large boats to be used on these canals. Thus, the entire scheme, when completed—which is expected to require 15 years—will provide a continuous system of canal communication between Eastern and Western Germany. The estimated cost of the entire system will be about $97,250,000. It is thought that the additions made will remove some of the opposition which defeated the plan two years ago.

SOME IRON ORE FIGURES.—Mr. H. L. Holden, dock agent of the Duluth & Iron Range Railroad at Two Harbors, Minn., has given the Cleveland "Marine Review" some interesting details regarding the 4,007,294 gross tons of iron ore transferred from railway cars to vessels during the past season at Two Harbors. The total number of cargoes was 960 and the number of vessels 181. The steamer "Wm. Edenborn," one of the Wolvin 500-footers, loaded the largest cargo of the season—7,446 gross or 8,340 net tons. The average cargo for all the vessels was 4,178 gross tons. The average time of loading for all the 960 cargoes was 7 hours. The average draft of ships was 16 ft. 11 in., and the maximum draft 18 ft. ½ in. One vessel, making a trip in midsummer, loaded to 18 ft. 2 in., but was said to have met with difficulty at the Sault Canal.

The steel steamer "Mataafa" and barge "Madira" of the Minnesota Steamship Company's fleet distinguished themselves in the Two Harbors trade last season. They each moved 19 cargoes of ore. The steamer's total of ore moved was 120,904 tons, and that of the barge 133,457 tons, so that together they moved 254,361 tons.

AN IMPROVED COLOMBIAN GOLD-MILL.*

By Edward Halse.

An instance occurred at the reduction plant of the Colombian Mines Corporation, Limited, Antioquia, Colombia, where the water-power available for two existing native batteries was much in excess of their needs and was running to waste. The native mills were driven directly from the axles of overshot wheels, and never attained a greater speed than 60 drops a minute. The ground not being considered firm enough for the foundation of a heavy modern mill, the writer's predecessor at the mines, Mr. William Crosley, designed and erected an improved form of native mill, arranged in 4 batteries of 4 heads each, which has done excellent work.

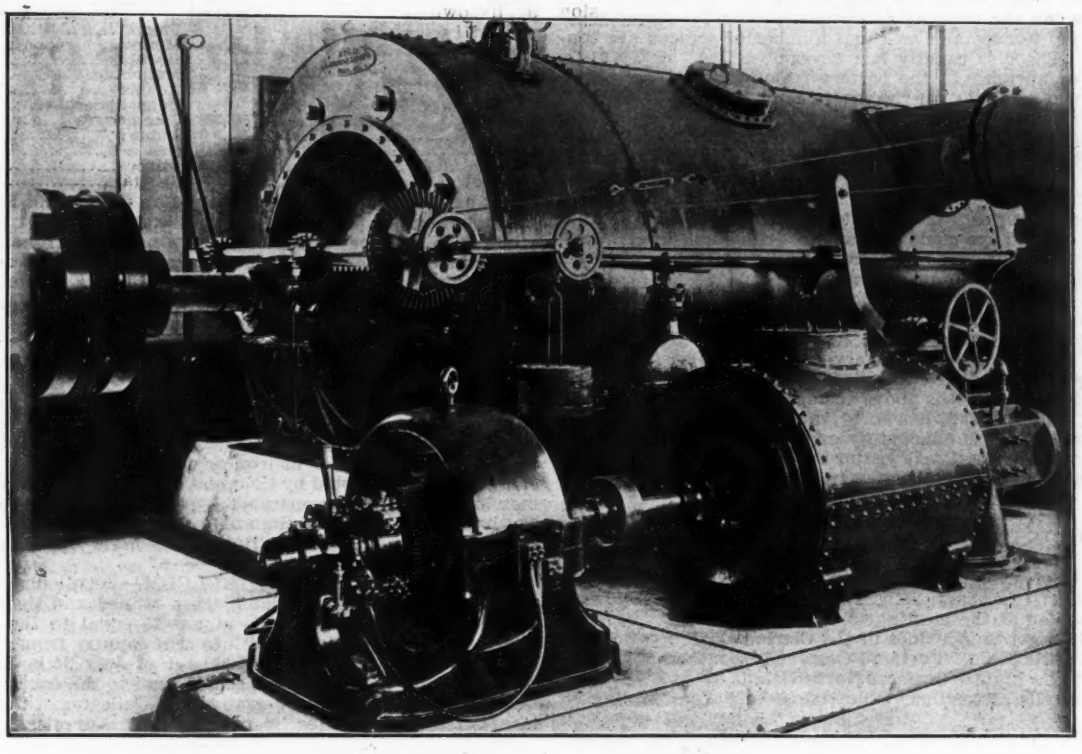


FIG. 2.—TRUCKEE RIVER ELECTRIC PLANT. TURBINES AND EXCITER.

The mill is worked by a wooden overshot water-wheel, 30 ft. diameter and 4 ft. breast, with arms of "aceite balsino" and buckets of "canelo"; total weight, 8,600 lbs. The axle is 32 in. diameter, made of "cagui," and weighs 4,523 lbs. At the end next the batteries is a large toothed wheel, built up solid on the axle of "aceite" and "maquimaqui" woods; it is 9¾ ft. diameter and 15 in. broad at the face, where it is provided with 79 iron teeth, each 9 in. long, 1½ in. wide, and 1½ in. thick in the center. The distance from center to center is 5 in. This wheel is made of 207 segments of wood, and contains upward of 200 bolts. The total weight is 4,481 lbs. It gears into a smaller toothed wheel 3½ ft. diameter, containing 26 teeth, and fixed on one end of the battery axle. By means of this intermediate gearing, the stamps can be driven at 100 drops per minute; but, as the wear and tear at this speed is somewhat great, 75 drops is seldom exceeded.

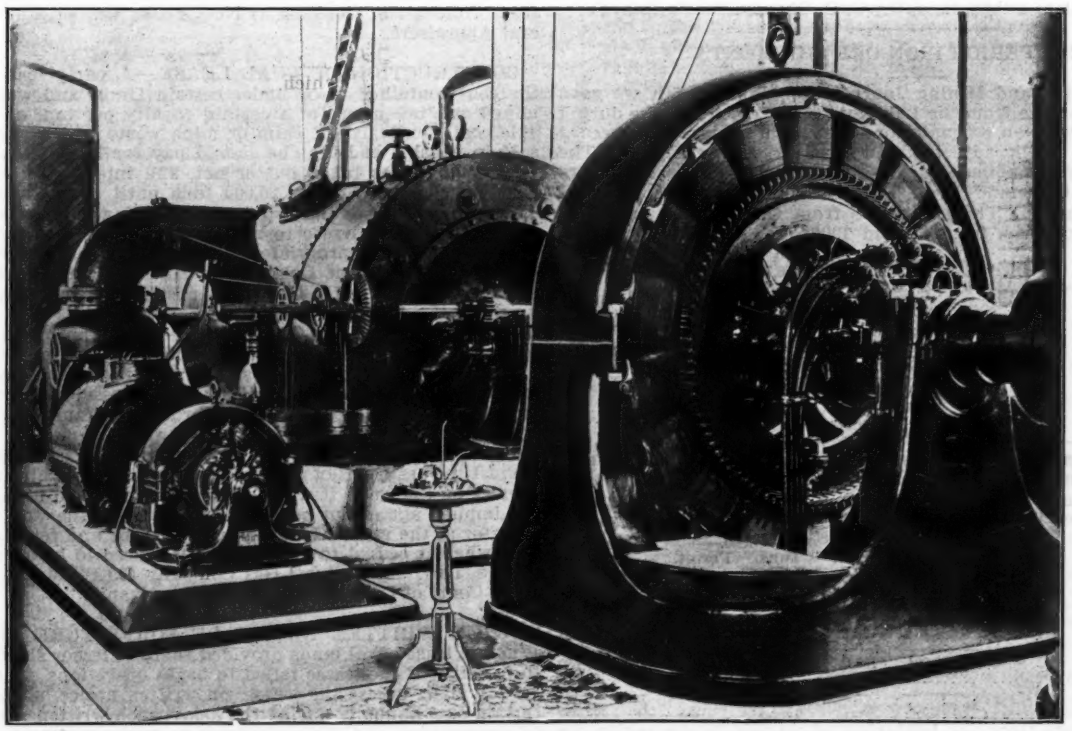


FIG. 3.—TRUCKEE RIVER ELECTRIC PLANT. WESTINGHOUSE GENERATING SET.

The wooden battery axle (corresponding to the cam-shaft of a modern mill) is 27 in. diameter, and contains a number of iron cams or teeth, which raise the iron tongues or tappets of the stamp-stems. The latter are of wood, 17 ft. long and 7 by 6 in. section, usually made of "aceite," and weighing 234 lbs. each.

The stamp-shoe is of forged steel, 10½ in. high by 6¾ by 6 in.; it weighs 135 lbs. and has a tenon or shank about 12 in. long, which is wedged in a mortise or socket in the foot of the wooden stem. The die,

*Paper read before the Institution of Mining and Metallurgy, London, January 16th, 1901.

measuring 9 by 8 in. by 3¼ in. deep, is also of forged steel, and weighs 62 lbs. The shoes and dies are made at the Sandycroft Foundry. The height of drop is 7 in., and the order of falling is 1, 4, 3, 2. The coffers or mortar-boxes are of wood and are shallow, measuring (inside the ½-in. steel lining plates) 34½ in. long, 13 in. wide, and 20 in. deep; 3¼ in. of this depth is taken up by the dies. The depth of discharge is 6 in. The steel-wire screens are 24 in. long by 12 in. wide, and vary usually from No. 12 to No. 20. The total screen area is 8 ft. Using No. 12 screens the mill will crush 300 to 500 tons per month, according to the hardness of the ore and the quantity of water available for running the mill. On an average, 4 shoes and an equal number of screens are consumed per month. The dies usually last a year.

The main posts or uprights of the battery frame are made of "aceituna," "zapan," "coco colorado" or "zapatillo zen," and are 14 by 7 in. section. The guide-beams, of which there are 3 pairs, are of 7 by 6-in. section. Wooden guides, of which the upper half rests on the guide-beams, are let in at the front and back of the latter; between the stems, and between the stems and the uprights, are narrow guides or divisions. The guides are usually made of "perillo." The legs or diagonals supporting the gudgeons ("guijos") of the water-wheel and battery axle are of 12 by 12-in. section, and are made of "canelo" (cinnamon tree), "aceituna," "zapan," "cagui," or "maquimaqui." The pair of legs with its crown-piece is called a "burro" in Antioquia.

The body of the tappets, as well as that of the teeth or cams, must be made of very hard resisting wood, such as "coco colorado" or "granadillo." These tappets are provided with iron plates and are raised by the curved plates or cams on the battery axle.

The whole mill was made at the mines, Colombian labor alone being employed. The floor of the mill is above the spalling-floor, and the ore, after hand-picking and spalling, has to be raised 28 ft. vertical to the mouth of the hopper. This is effected by an ingenious automatic skip arrangement, designed by Mr. Crosley, run by belting from the axle of the water-wheel; 24 tons can be elevated in 10 hours, nearly one-third of this time being consumed in raising the loaded skip.

THE OHIO INSTITUTE OF MINING ENGINEERS.

The Ohio Institute of Mining Engineers will hold its annual meeting in Columbus, Ohio, on February 26th, 27th and 28th. The following papers will be presented at the meeting:

Prof. N. W. Lord, "Economic Values of the Clarion Coal."

J. W. Jones, Gallipolis, Ohio, "Portland Cement in Southern Ohio."

R. M. Haseltine, "The Lignite Coals of North Dakota."

Hon Anthony Howells, Massillon, Ohio, "Coal and Coal Mining in South Wales."

Robert B. Collier, Columbus, Ohio, "Notes on Costa Rica, Central America."

Prof. F. C. Caldwell, Columbus, Ohio, "Long-distance Electrical Power-transmission from Coal Mines."

"Prof. Edward Orton, Jr., State Geologist, Columbus, Ohio, "The Cement Materials of Ohio, and a Method for their Chemical Examination."

Papers, the subjects of which have not yet been announced, will be read by the following members: Ebenezer Jones, Zoar, O.; L. D. Howard, Des Moines, Ia.; Solon C. Smith, Jackson, O.; C. L. Cassingham, Coshocton, O.; William Hibbs, Scio, O.; C. C. Cheney, Bird's Run, O.

LAKE SUPERIOR IRON ORE SHIPMENTS.

In the "Engineering and Mining Journal" for January 5th we gave the shipments of iron ore from the Lake Superior Region by lake during the season of 1900, with an estimate for the rail shipments. The record for the year is now finally adjusted, and the figures are complete. The statements below are compiled—as those for a series of previous years have been—by the Cleveland "Iron Trade Review" from the books of the shipping companies. The shipments from the various ports and by rail were in long tons, for 1899 and 1900:

	1899.	1900.	Changes.	Per ct.
Escanaba	3,720,218	3,436,734	D. 283,484	7.6
Marquette	2,733,596	2,661,861	D. 71,735	2.6
Ashland	2,703,447	2,633,687	D. 69,760	2.6
Two Harbors	3,973,733	4,007,294	I. 33,561	0.8
Gladstone	381,457	418,854	I. 37,397	9.8
Superior	878,942	1,522,899	I. 643,957	73.2
Duluth	3,509,965	3,888,986	I. 379,021	10.8
Total by lake	17,901,358	18,570,315	I. 668,957	3.7
Rail	350,446	489,078	I. 138,632	39.6
Totals	18,251,804	19,059,393	I. 807,589	4.4

It will be seen that the gain last year was entirely from the ports at the head of Lake Superior. Marquette and Ashland showed small decreases, and Escanaba on Lake Michigan a large one. The division of the ore by ranges, including the rail shipments, was as follows:

	1899.		1900.		Changes.	
Ranges:	Tons.	Per ct.	Tons.	Per ct.		Tons.
Marquette	3,757,010	20.6	3,457,522	18.1	D.	299,488
Menominee	3,301,052	18.1	3,261,221	17.1	D.	39,831
Gogebic	2,796,856	15.3	2,875,295	15.1	I.	79,439
Vermilion	1,771,502	9.7	1,655,820	8.7	D.	115,682
Mesabi	6,626,384	36.3	7,809,535	41.0	I.	1,183,151
Totals	18,251,804	100.0	19,059,393	100.0	I.	807,589
Michipicoten (Canada)	.....	.....	62,000	.....	I.	62,000
Totals	18,251,804	.....	19,121,393	.....	I.	869,589

The total shipments from the beginning of mining in the region up to the end of 1900 were as follows:

	Long tons.
Marquette Range, 1850-1900	59,592,793
Menominee Range, 1850-1900	34,015,979
Gogebic Range, 1884-1900	31,216,635
Vermilion Range, 1884-1900	15,191,180
Mesabi Range, 1893-1900	31,400,077
Miscellaneous	2,320
Total, 1850-1900	171,418,984

The rapid increase in recent years is shown by the fact that the output of 1900 was nearly one-ninth of the total recorded from the opening of the mines 50 years ago. The large gains in the last five years have been chiefly due to the great production of the Mesabi Range, which was first opened in 1893.

In the table below we give the shipments of all the mines whose totals exceeded 200,000 tons:

Marquette Range.		**Vermilion Range.**	
Cleveland Cliffs	881,021	Chandler	644,891
Lake Superior	709,143	Pioneer	450,794
Queen	398,298	Minnesota	325,020
Lake Angeline	389,128	**Mesabi Range.**	
Menominee Range.		Fayal	1,252,504
Chapin	929,937	Mountain Iron	1,001,324
Aragon	404,645	Biwabik	924,868
Pewabic	374,043	Mahoning	917,021
Gogebic Range.		Adams	777,346
Norrie	666,389	Lake Superior	284,023
Tilden	481,909	Commodore	278,416
Pabst	239,242	Auburn	263,692
Ashland	232,961	Genoa	253,651
Newport	217,201	Oliver	244,876
		Sparta	202,144

Not only were the two larger mines on the Mesabi Range, but we find on that range no less than 11 mines which exceeded 200,000 tons each, while only 5 mines on the Gogebic, 4 on the Marquette, 3 each on the Menominee and Vermilion ranges are recorded as reaching that point.

The importance of the Lake Superior mines to our iron industry is shown by the fact that since their first opening they have furnished ore enough to make over 100,000,000 tons of pig iron.

RECENT DECISIONS AFFECTING THE MINING INDUSTRIES.

Specially Reported for the Engineering and Mining Journal.

APPRAISING IRON AND STEEL SHEETS.—To ascertain dutiable rate of sheets or plates of iron or steel, they must be measured by the standard gauge adopted by Congress and approved March 3d, 1893. Such merchandise is not measurable by the Birmingham gauge.—Appeal of National Enameling and Stamping Company from Collector of Customs at New York; United States Board of General Appraisers.

DUTIES ON RUSSIAN PETROLEUM.—Petroleum produced in Russia and imported into England, there refined and thence imported into the United States, is dutiable at a rate equal to the rate imposed by Russia on petroleum imported into that country from the United States. The provisions of paragraph 626, Act of July 24th, 1897, apply to the country where the oil is produced and not to the country of exportation. —Appeal of Vacuum Oil Company from Collector of Customs at Rochester, N. Y.; United States Board of General Appraisers.

DUTY ON GAS RETORTS OF FIRECLAY.—Where a paragraph of the Tariff Act provides by name for a certain article, without specifying any limitations as to dimensions, it cannot be construed to limit the article in question to any particular length or size. A gas retort, imported in two segments, the two pieces when cemented together constituting but a single article, is dutiable as one gas retort, at $3, under paragraph 98, Tariff Act of 1897, and it is error for the collector to assess duty on each piece as a complete retort.—Appeal of F. Behrend from Collector of Customs at New York; United States Board of General Appraisers.

CONSTRUCTION OF COAL LEASE.—A party leased of another all the coal contained in or under certain lands, and was to pay for coal mined and taken out, at a certain royalty per ton, on clean merchantable coal, "exclusive of culm or mine waste which would pass through a ½-in. mesh," and that he should pay for 10,000 tons yearly, whether that amount was taken out or not, and interest on sums representing yearly deficiencies below 20,000 tons until that amount was reached. The court held that the provision regarding culm was to be construed as permitting the lessee to mine culm or not, as he chose, but that if he did mine and appropriate culm, he was liable for royalties on same. —Genet vs. President Delaware & Hudson Canal Company (57 Northeastern Reporter, 297); Court of Appeals of New York.

CONSTRUCTION OF GAS LEASE.—Under an oil and gas lease for a term of 20 years a well was drilled, and produced gas which was utilized by the assignees of the lessees, who paid the lessor a stipulated royalty of $500 per annum on the well for two successive years, and before the end of the second year the well, through no fault of the assignees and operators, was flooded with salt water and ceased to produce gas, not being due to any negligence of the assignees. A lessor brought suit against the assignees of the lessees to recover the third and fourth years' royalty on the well. It was held that there should be read into the lease the implied agreement or understanding that the well which was to be paid for at the rate of $500 a year was to be and remain a gas well, and that when it ceased to produce gas it ceased to be a gas well.—McConnell vs. Lawrence Natural Gas Company (30 Pittsburg "Legal Journal," 346); Court of Common Pleas of Pennsylvania.

WHEN WRITTEN NOTICE OF FORFEITURE IS ESSENTIAL.—Where a lease of oil lands provided that the lessor should have the right to forfeit it if the lessee failed to begin operations under same within a certain time, unless the lessee, on written notice, should elect to pay a certain sum annually during the delay, such written notice was essential to a forfeiture, and the mere delay in beginning operations beyond the time limited was not of itself sufficient to forfeit the lease and let in a subsequent lessee, whose lease was conditioned on the avoidance of the first. Where an agent of the lessee of oil lands, whose business it was to take leases, had knowledge of a prior lease at the time of taking his principal's lease, and the vice-president of such lessee also had sufficient knowledge to put on inquiry, and the lessee interposed no defence of innocent purchaser, the latter's rights will be subordinate to those of the prior lessee.—South Penn Oil Company vs. Stone (57 Southwestern Reporter, 374; Court of Chancery Appeals of Tennessee.

MINERAL COLLECTORS' AND PROSPECTORS' COLUMN.

(We shall be pleased to receive specimens of ores and minerals, and to describe and classify them, as far as possible. We shall be pleased to receive descriptions of minerals and correspondence relating to them. Photographs of unusual specimens, crystals, nuggets and the like, will be reproduced whenever possible. Specimens should be of moderate size and should be sent prepaid. We cannot undertake to return them. If analyses are wanted we will turn specimens over to a competent assayer, should our correspondent instruct us to do so and send the necessary money.—Editor E. & M. J.)

282.—Rocks from Virginia.—H. L. A.—So far as one can tell by the inspection of your specimens, the rocks might be of igneous or of sedimentary origin. Miscroscopic examination and close study of the field relations are necessary to decide definitely the origin of rocks so completely altered. All the specimens you send are schists. No. 1 would be called a slate; it is more exactly a micaceous schist; No. 2 is even more altered than No. 1 and the rock is almost a talc schist; No. 3 is a typical green schist, a convenient field name for old rocks of sedimentary or of igneous origin that are developed on an enormous scale in the Lake Superior country. No. 4 is a gneiss rather than a schist, a coarser type of No. 1. No. 5 is a mica schist containing traces of copper carbonate. Most of the specimens contain particles of a sulphide, apparently tetrahedrite. Though undeterminable macroscopically, all your specimens are probably of igneous origin. The greenish rock may have been a diabase; the light-colored, andesite. See W. H. Weed's paper on "Types of Copper Deposits in the Southern United States," read before the Washington meeting of the American Institute of Mining Engineers.

283.—Iron Ore.—J. T.—The brown material is iron oxide. As you say it occurs in a clay bed, it probably represents a ferruginous streak in the original rock, which may have been a mica schist. The stuff is probably of no value at all. There is no market value for ordinary chert. Specimens much brighter colored than yours can be found on many rock dumps at the Lake Superior iron mines.

284.—Lead Crystals.—In the Luce & Rosan process of refining silver-lead products by steam as practiced by the Richmond Mining and Smelting Company, of Eureka, Nev., the lead is melted in 20-ton iron pots placed above the level of the refinery floor, and after fusion is run out into smaller pots or molds holding 4 tons each, on the floor and allowed to cool. When solidified the blocks are raised by steam cranes and placed aside for further operations. Mr. Edward Probert, of the Richmond Company, informs us that by chance a block recently was lifted before the interior had sufficiently cooled, and in consequence the upper and lower surface of the block separated somewhat, leaving a space in the center where crystallization took place, producing a mass of beautiful crystals of lead of the isometric system, such as are rarely seen occurring in nature.

285.—Zircon.—According to a San Francisco paper, John Wedekind and Willard Johnson have located 7 claims within 14 miles of Reno, Nev., on a lead from which good specimens of zircon, or hyacinth, have been taken. Specimens were sent to a San Francisco professor who discovered the stones to zirconium silicate ($ZrSiO_4$). It has a hardness of 7.5, characteristic crystallization, adamantine luster and high index of refraction. Several of the hyacinths have been cut and resemble off-color diamonds.

QUESTIONS AND ANSWERS.

(Queries should relate to matters within our special province, such as mining, metallurgy, chemistry, geology, etc.; preference will be given to topics which seem to be of interest to others besides the inquirer. We cannot give professional advice, which should be obtained from a consulting expert. Nor can we give advice about mining companies or mining stock. Brief replies to questions will be welcomed from correspondents. While names will not be published, all inquirers must send their names and addresses. Preference will, of course, always be given to questions submitted by subscribers.—Editor E. & M. J.)

Substitutes for Mica.—Has any substitute for mica as an insulator in electric work been discovered or introduced lately?—M.

Answer.—High authorities on electrical work inform us that no substitute for mica has been found. Electrical construction companies continue to be large users of the mineral.

The Wyoming Development and Transportation Company.—Can you give me any particulars in relation to this company?—A. L. A.

Answer.—The Wyoming Development and Transportation Company, which owns mines at Gold Hill, Carbon County, Wyoming, and the stock of which is dealt in in Boston, Mass., is stated by a correspondent to be of very doubtful value, and he furnishes confirmatory evidence to the truth of his statements. We have not room to print the correspondence, but think it would be wise for intending purchasers to look carefully into the enterprise before parting with their money.

Sulphide Copper Ores.—In a sulphide copper ore what is generally supposed to be a self-fluxing ore? What proportion of Cu, Fe, Ca, Al, etc., may be called a perfect fluxing ore? Are the proportions always the same, and do the fluxes, if any, that are added have to be so proportioned as to bring the mixture up to some definite percentages? Is the eventual proportion purely empirical?—W. F. W.

Answer.—There is no absolute rule—that is, no fixed percentage which will make a self-fluxing ore. The proportions may vary within certain limits. You will find much information on this point in the chapters on pyritic smelting in Peters' "Modern Copper Smelting," and in Hixon's "Lead and Copper Smelting," especially the chapter on furnace charges. By comparing your analyses with those given in Dr. Peters' book, you will see their relation.

Magnesite.—Will you inform me whether magnesite is found in solid ledges or in small stringers?—R. B. S.

Answer.—Magnesite, magnesium carbonate, may occur in a variety of ways. Dolomite, a mixture of calcium and magnesium carbonates, forms extensive strata in many parts of the world. By removal of the calcium carbonate heavy beds of magnesite might be formed. On the other hand, magnesite is a product of the alteration of magnesian silicates, such as serpentine, and is consequently found in talcose schists, or other magnesian rocks, or as veins and stringers found in serpentine. The deposits on the Island of Euboea, on the East coast of Greece, the principal source of supply, occurs in heavy ledges and the rock is quarried out of open cuts. See "Engineering and Mining Journal," March 10th, 1900.

Undeveloped Lode.—What class of ore do you think will be found below the oxide zone in an iron lode as below described? The lode is composed of the hydrated or brown oxide, in some places very solid, and in other places porous and containing slight traces of malachite. The geological formation on all sides is granite, and the lode is nearly vertical. No mines have been worked near it, but about a kilometer on both sides are small veins of quartz showing malachite and semi-decomposed chalcopyrite; these veins are in the same formation and run parallel with the main iron lode. A shaft was sunk on this lode some 8 to 10 m. deep, but cut nothing but iron oxide; this shaft, however, is located on the top of a hill at least 150 m. above water level. The average width of this lode is about 6 ft., and its length many kilometers, therefore forming what may be called a main drain cutting through the granite hills, situated near the center of Spain.—Trefoil.

Answer.—An "iron hat" such as you describe is likely to show sulphides below the water level. As you say the iron ore contains traces of malachite and other veins in the same district belonging to possibly the same system contain chalcopyrite, the lode you describe may show copper-iron sulphides in depth, chalcopyrite, bornite, etc. Such questions as the above, however, can scarcely call for more than a guess. An opinion to be at all valuable needs to rest upon actual observation and analyses. As the case stands, only money invested in some drill holes or a shaft to below water level will give reliable results.

Publication before Patenting.—Would it in any way invalidate my rights to a patent if I should introduce a new or improved machine or method for another party to use, before making the application for a patent?—L. B. D.

Answer.—Mr. Thomas J. Johnston, of No. 66 Broadway, New York, takes exception to the answer given to this question in our issue of February 2d last, and writes us as follows: "So far from publication or public use of an invention being objectionable before patenting, it is in the highest degree desirable; the Patent Law gives two years after the first printed publication fully disclosing the invention, or the first public use of a machine or process embodying it, in which to apply for a patent. Most inventors err on the side of too much secrecy; if all inventors worked on different lines this would not matter; but in case of interference the secretive inventor has no evidence except his own statements, of his dates of conception, disclosure, and reduction to practice. As a general proposition an inventor should always make sketches and full written descriptions of his invention as soon as possible; these he should sign and date, as soon as completed, and should also have them witnessed, fully explaining the matter to the witnesses, so that they understand it and having them sign their names and the dates. With this evidence it is fairly safe to say that interference arising on the invention will be decided according to the dates of disclosure.

"It is true that a publication disclosing an invention is an available reference for a patent in a foreign country; that is to say, in Germany and France, for example, the disclosure of an invention in a newspaper will bar a patent to anybody, even though the disclosure is made by the inventor himself. Our law, however, is more liberal and realizes that it is very desirable for inventors to perfect their devices before rushing to the Patent Office. For this reason I must also dissent from your proposition regarding a caveat; no reputable patent solicitor would recommend the filing of a caveat, which gives no protection and costs as much as a patent application. It is far better for the inventor to preserve evidence of his work and bring it as nearly to perfection as he can before filing his application. As an example of the frequency of caveats among well-informed inventors I might say that, although I have prepared about 4,000 patent applications, I have prepared but one caveat, and have had but one litigation based upon a caveat; in both cases the caveat proved utterly worthless, and the money spent on it was simply wasted."

PATENTS RELATING TO MINING AND METALLURGY.

UNITED STATES.

The following is a list of the patents relating to mining and metallurgy and kindred subjects, issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

Week Ending January 22d, 1901.

666,257. PROCESS OF MAKING ILLUMINATING GAS. Eduard R. Besemfelder, Charlottenburg, Germany. A continuous process of making illuminating gas, which consists in subjecting a body of carbonaceous material to dry distillation for producing coal gas, continuously overturning said material while undergoing distillation, continuously conducting a stream of heated water-gas in contact with said overturning material, and conducting off for use the mixture of coal-gas and water-gas thereby produced.

666,300. PROCESS OF MAKING ZINC SULPHIDE. Emil Beringer, Charlottenburg, Germany. A process for the formation of sulphide of zinc suitable for the manufacture of white paints and for the simultaneous formation of rhodanates of sulpho-cyanides, comprising the treatment under pressure and at a temperature not exceeding 300° F. of carbon bisulphide by an ammoniacal solution of zinc oxide, the mixture being agitated until the reaction is completed.

666,302. PROCESS OF MAKING PAINT. Caleb G. Collins, New York, N. Y., assignor to Calvin Amory Stevens, same place. The process consists in producing a solution of an alkali-metal silicate, introduc-

ing into the same a dye salt, and passing an electric current through, thereby subjecting said mixture to electrolytic dissociation, thus precipitating silica or silicic acid together with a dye salt.

666,321. PROCESS OF METALLIZING WITH PRECIOUS METALS. Rudolf Langhans, Berlin, Germany. The process consists in wetting a foundation with a solution of a compound or compounds of precious metals with allopathic sulphur derivatives prepared with a volatile solvent, drying, heating first up to the melting point of the metallizing compounds, and then raising the heat above the decomposition point of said compounds.

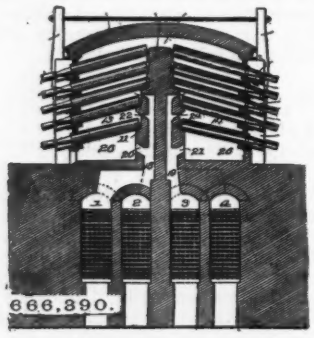
666,347. ARTIFICIAL STONE TANK. Frank E. Gregory, St. Johns, Mich. A tank comprising a bottom slab, sides composed of a plurality of staves resting on said bottom, a hoop surrounding said staves and overlapping said bottom, and a plastically-laid lining of artificial stone sealing the joint between said staves and bottom.

666,367. APPARATUS FOR CASTING IRON. Richard H. Wainford, Stoke-on-Trent, England. In a casting apparatus, a tiltable ladle, a row of molds to receive the metal therefrom, and a track on which the ladle is moved, the row of molds and the track being at different angles to the horizontal.

666,374. STEAM PUMPING ENGINE. Henry Breitenstein, Laramie, Wyo. The combination of two steam cylinders provided with pistons as usual, a steam chest at the end of each cylinder having ports leading to opposite ends of the more remote cylinder, and a tappet-rod extending into the adjacent cylinder, pistons on said tappet-rods, and a by-passage extending from near the remote end of each cylinder to the remote end of its own steam chest.

666,387. APPARATUS FOR PRODUCING ALKALI, ELECTRICITY AND HYDROGEN FROM ALKALI-METAL AMALGAM. Josiah W. Kynaston, Liverpool, England. An apparatus for denuding alkali-metal amalgam of its alkali, and at the same time producing electricity, which consists of an iron cathode, a series of superposed trays surrounding the same, a thin quiescent horizontal layer of alkali-metal amalgam on each of these trays, and conductors completing an electric circuit.

666,390. REGENERATIVE RETORT-HEATING FURNACE. Charles F. Neureuther, Peru, Ill. A furnace having a combustion chamber,

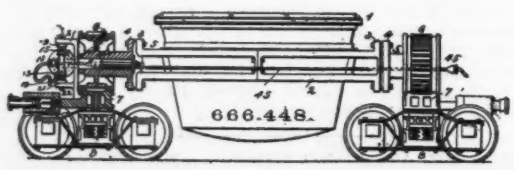


a vertical wall extending upwardly into the same and dividing it into two compartments and serving with the outer walls to support the tiers or rows of retorts, and regenerators communicating with the compartments of the combustion chamber.

666,409. COMMINUTING MACHINE. George D. Coleman, Boston, Mass., assignor to the Coleman White Lead Company, Portland, Me. The combination with a vertical standard, of a horizontal table secured thereto and projected at right angles therefrom, providing a support for the metal to be comminuted, guides to direct the movement of the metal, a clamp having means for clamping it upon the metal and provided with a catch to hold it in its retracted position, a rope attached to the clamp, guide rollers and a weight for moving the clamp and the metal toward the comminuting tool, a comminuting tool consisting of a plurality of rasps fixedly secured to a carrier by means of a clamping plate, a flange on said carrier for supporting the lower ends of the rasps, suitable guides in the vertical standard for supporting said carrier, and means for actuating said tool.

666,446. CLARIFYING SULPHUROUS HYDROCARBON OILS. John W. Warren, Omaha, Neb., assignor of one-half to I. H. Warren, Elgin, Ill. The method consists in mixing with the oil disintegrated Wyoming rock-clay, allowing the same to settle, and finally pouring off the oil.

666,447 and 666,448. CINDER OR HOT-METAL CAR FOR BLAST FURNACES. Edgar A. Weimer, Lebanon, Pa. A car having a ladle supported at both ends upon rocks and spur wheels engaging the



racks, gear wheels and pinions connected to one of said spur wheels; in combination with a motor supported at one end of the car and connected to the ladle by said gearing, to impart lateral and revoluble motion thereto, and means for supplying motive power to said motor.

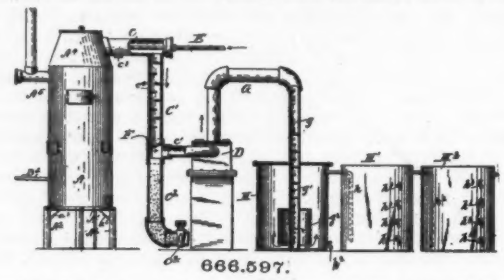
666,478. WELL-DRILLING MACHINE. John J. Koger, Mooresburg, Tenn. The combination with an upright having pulleys mounted thereon, a drill, a windlass and rope connections between the latter and said drill, a horizontally-disposed wheel having radiating spokes, a pivoted bar and connections between same and said drill-actuating rope, blocks on the under surface of each spoke of said wheel adjacent to their outer ends, and an anti-friction roller mounted on the free end of said pivoted bar, and disposed in the path of said blocks, and adapted to throw said lever as each spoke passes said anti-friction roller, whereby the drill is raised, and means for holding said wheel against vertical movement while the drill is being raised.

666,481. SELF-ACTING MELTER. Guido Palazzi, Ugo Palazzi and Vittorio Pivetta, Naples, Italy. An apparatus for melting by means of gas and steam, comprising a boiler, a steam outlet thereto, a gas conduit, an exit thereto surrounding the steam outlet, and a shunt, burners therein adjacent to the boiler, and a valve on the conduit and an independent valve on the shunt for regulating the burners.

666,541. WELL PACKER. Fred J. Moser, Kane, Pa. A well packing, consisting of an elastic tube having inner and outer concentric and spaced walls forming an annular fluid chamber within the tube, and provided with thickened ends, through one of which leads a filling opening adapted to be closed after the chamber has been filled, the inner wall of the tube being adapted to fit snugly throughout its length upon a pipe.

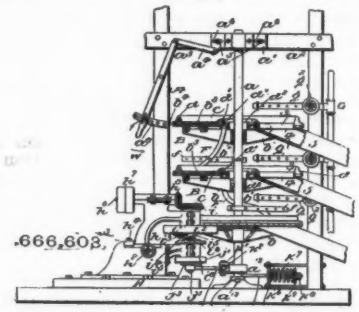
666,588. ROTARY PUMP FOR AIR, WATER, ETC. James Aitken, The Breakwater, near Geelong, Victoria. A casing provided with suitable inlet and discharge ports, a pair of screws having threads of gradually-decreasing depth toward the discharge end thereof, means for operating said screws synchronously, a passage or way suitably connected to said cylinder, a continuous series of traveling stops or fingers arranged in the said way and casing and adapted to engage and have motion imparted thereto by the said threads.

666,597. APPARATUS FOR TREATING ZINC ORES. Samuel G. Bridges, Kansas City, Mo. A fume arrester, comprising a pump, a pipe for conveying fumes to the pump, and provided with a water supply



and baffle plates, a trap in advance of the pump inlet to prevent the admission of solid matter to the pump, a condensing tank and a vertically-disposed pipe leading from the pump into the condensing tank.

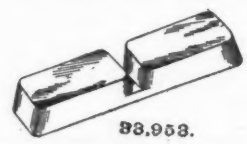
666,603. ORE CONCENTRATOR. Herbert H. Cramer, Aspen, Colo. A table having a segmental opening, a circular passage extending nearly entirely around such table with a transverse opening between its ends over said segmental opening, and having inner and outer cir-



cularly-arranged ribs, means for tilting the table, a launder leading from beneath said openings in the table and passageway, a trough concentric with the table in juxtaposition to one of its ribs, for receiving the tailings from the passageway, and means for reciprocally rotating the table.

666,627. PROCESS OF MAKING PICRIC ACID. Max Neumann, Wittenberg, Germany, assignor to Westfalisch-Anhaltische Sprengstoff-Aktien-gesellschaft, Berlin, Germany. The process of producing picric acid from anilin, which consists in converting anilin into sulphanilic acid by treating with fuming sulphuric acid, diazotizing the sulphanilic acid by the action of nitrous acid, and finally treating the obtained diazobenzenesulphonic acid with nitric acid.

Design No. 33,953. INGOT. Isaac Shelby Weiler, New York, N. Y., assignor



to the Smith-Courtney Company, Richmond, Va. The design for an ingot of metal substantially as shown.

GREAT BRITAIN.

The following is a list of patents published by the British Patent Office on subjects connected with mining and metallurgy.

Week Ending December 22d, 1900.

24,058 of 1899. GAS CONDUITS. Dr. W. Bein, Berlin, Germany. Methods of carrying away gases generated in electrolytic apparatus.

710 of 1900. ZINC-LEAD SULPHIDE TREATMENT. G. E. Davis and A. R. Davis, Manchester. Treating mixed sulphides of zinc and lead by leaching with nitric acid and removing the lead by adding zinc oxide.

2,094 of 1900. FIRE-DAMP DETECTOR. G. A. Lyncker and M. L. F. Mohr, Munich, Germany. Apparatus for detecting the presence of fire-damp in mines and coal-gas in coal storages.

11,091 of 1900. AIR DRYER. J. Gayley, Pittsburg, U. S. A. Apparatus for removing moisture from air used in blast furnaces and converters.

14,942 of 1900. BLAST-FURNACE HOIST. W. Kennedy, Allegheny, U. S. A. Improvements in cars used in hoisting ore, etc., to the top of blast furnaces.

15,552 of 1900. COAL DRILL. W. George, Glamorgan. Improved form of drill tool for making shot holes for breaking down coal.

17,390 of 1900. NICKEL-COPPER-ZINC ALLOYS. M. Ekker and J. Krajcsics, Budapest, Hungary. Improved method of making nickel-copper-zinc alloys of silvery luster.

Week Ending December 29th, 1900.

483 of 1900. FUME COLLECTION FROM ZINC-LEAD SMELTERS. F. Ellershausen, London. Method of drawing off fumes from cupola furnace treating zinc-lead sulphides by means of a pan, and separating the zinc and lead in water passing through the pan.

16,529 of 1900. ARTIFICIAL CORUNDUM. General Electro-Chemical Company, Jersey City, N. J., U. S. A. Manufacture of artificial corundum in the electric furnace from bauxite.

17,028 of 1900. CONTINUOUS PUDDLING FURNACE. S. P. Kettering, Sharon, Pa., U. S. A. Apparatus for making wrought iron continuously from pig.

PERSONAL.

Dr. F. W. Ihne, mining engineer, of Chicago, is at present examining mines in the Southwest.

Mr. R. Winters, superintendent of a dredger at Idaho City, Idaho, has returned there from Boston, Mass.

Mr. Wm. Bind, mining engineer, of San Francisco, is in Durango, Mex., examining a gold and silver property for Eastern men.

Mr. Juan Cuyas, manager of the Mexican branch of the Ingersoll-Sergeant Drill Company, is in New York City for a short visit.

Mr. Felix Chappellet, Jr., has gone from Placer County, California, to superintend operations at the Santa Rosalia Mine, Sonora, Mexico.

Mr. Paul A. Fusz, of the Granite-Bimetallic Company, of Granite County, Mont., has been in Butte from his home in St. Louis, Mo.

Mr. A. Raht, superintendent of construction of the American Smelting and Refining Company, has returned to Salt Lake, Utah, from Mexico.

Mr. John K. Mackenzie, mining engineer, of Chicago, is now in Europe on professional business. He expects to return to Chicago in May.

Mr. C. D. Marx, professor of engineering at Standford University, was recently elected president of the Technical Society of the Pacific Coast.

Mr. E. M. Grant, head electrician of the Mountain Copper Company, Keswick, Cal., has resigned, and is succeeded by Mr. J. Mackenzie, of Portland, Ore.

Mr. H. L. Hollis, of Chicago, has been appointed consulting engineer for the Federal Gold Mining Company, of Chicago, with mines at South Pass, Wyo.

Mr. J. Noonan, superintendent of the Dos Cabezas Consolidated Mining Company of Arizona, has resigned and is now in California. Mr. C. M. Roberts succeeds him.

Mr. J. B. Hastings, recently in charge of the War Eagle Mine at Rossland, B. C., sailed from New York on the Teutonic on February 6th. He will be in Europe about 2 months.

Mr. Dick Lacey, of Brooklyn, N. Y., has accepted a position with the Heinze properties as engineer. Mr. Lacey is a recent graduate of the Columbia University School of Mines.

Mr. C. H. Wellman, of the Wellman-Seaver Construction Company, of Cleveland, O., which constructed the Ensley, Ala., steel plant, has been in the Birmingham district with Mr. D. H. Bacon.

Mr. E. H. Cook has resigned as superintendent of the United Globe Mines at Globe, Ariz., and is succeeded by Mr. Niles S. Berray, who was formerly superintendent of the Old Dominion Mines.

Mr. George T. Robinson, of Johnstown, Pa., has been appointed lessee and manager of the Cambria Iron Company's coke works in the Connellsville Region, succeeding the late Mr. Martin Meagher.

Mr. Walter Hutton, heretofore superintendent of the Sloss-Sheffield Steel and Iron Company's North Birmingham furnaces, has been chosen furnace manager of the Alabama Consolidated Coal and Iron Company.

Dr. L. P. Gratacap has been appointed as curator of the department of mineralogy of the American Museum of Natural History in New York City, while Prof. R. P. Whitfield remains curator of geology, with Dr. E. O. Hovey as associate curator.

Mr. F. M. Jackson, who was since its organization general manager of the Alabama Consolidated Coal and Iron Company, and who for several years past has been active in developing Alabama's mineral resources, left the service of the company on February 1st.

Capt. Isaac Williams, who has had charge of the Michigan Mine at Amasa, Mich., since it was opened up, recently resigned and is succeeded by Capt. Edwards from the Chicogan, who has had charge of the Ashland on the Gogebic and some of the large mines on the Mesabi.

Mr. H. Wade Hibbard, formerly connected with the Rhode Island Locomotive Works and the Pennsylvania and Lehigh Valley Railroads, has been elected professor of Mechanical Engineering of Railways at Sibley College, Cornell University. For the past 2 years he has been assistant professor and principal of the Railway School.

Mr. Don. H. Bacon, formerly president of the Minnessota Iron Company and now chairman of the board of directors of the Tennessee Coal, Iron and Railroad Company, is visiting the blast furnaces, steel plants, coal and ore mines, rock quarries, coke ovens and other properties of that corporation in Alabama and Tennessee. He will spend about 2 weeks in the States named.

OBITUARY.

George Baker Forster died at Corbridge, Eng., January 18th. Mr. Forster was 68 years old and had been associated with a number of North-country mines. He was president of the Mining Institute in 1888 and 2 succeeding years, a member of the Institution of Civil Engineers, and a vice-president of the North of England Mining and Mechanical Engineers' Association.

John Potter Marshall, for many years professor of geology and mineralogy in Tufts College in Massachusetts, died February 4th, aged 78 years. He had been connected with Tufts College from its first foundation. He was a careful and judicious collector of minerals and fossils and accumulated a very large and valuable collection, which is the property of the college.

SOCIETIES AND TECHNICAL SCHOOLS.

Lake Superior Mining Institute.—The annual meeting will be held in the copper country, at Houghton, Mich., on March 5th, 6th, 7th and 8th.

Syracuse University.—Ground has been broken for the new Hall of Mechanical Engineering, and work is being pushed in order that it may be in readiness for occupancy by the spring of the next college year. The building will be of stone, 4 stories above the basement, 133 ft. in length by 60 ft. in depth. Its equipment will be modern in every detail.

Cornell University.—The great hydraulic laboratory is nearing completion and will be ready for work early in the spring. In its incomplete condition it has been used for experiments in connection with United States Deep Water Ways Commission, also in experiments for the New York State Canals. Investigations have also been made in reference to the water supplies of the city of New York and for the Lake Superior Power Company.

American Chemical Society—Lehigh Valley Section.—The first meeting of the society for 1901 was held at Lafayette College January 17th. The officers of last year were re-elected—Dr. J. W. Richards, of Lehigh University, president, and Richard K. Meade, of Lafayette, secretary and treasurer.

Prof. Porter W. Shimer read a paper on a "Peculiar Mottled Iron" and Prof. Richards read two papers, on "The Measurement of Gold and Silver Buttons in Blowpipe Assays," and "Notes on Some Blowpipe Tests."

Montana Society of Engineers.—The annual meeting was held in Butte, January 10th to 12th. The members inspected the State School of Mines and the mines and smelters about the city. Mr. Horace V. Winchell delivered an interesting lecture upon "The Iron Mines of Minnesota."

The following officers were elected: F. L. Sizer, president; Aug. Christian, first vice-president; Geo. T. Wickes, second vice-president; Richard R. Vail, secretary and librarian; Joseph Harper, treasurer and member of the board of managers of the Association of Engineers Societies; Bertram H. Dunshee, trustee.

A committee of three was appointed to consider a revision of the constitution which would provide for a class known as "Junior Members." An account of the death and a short history was read of the late J. S. B. Hollinghead.

The annual banquet was held at the McDermott Hotel, where 45 of the members and their guests participated.

Society of Chemical Industry.—At the meeting in New York on January 25th, Dr. E. Hautke read a paper on the "Presence of Arsenic in Beer." The author stated that he had tested the different methods available for the determination of arsenic in beer, ale, glucose, rolled cereals, malt, coal, etc., and found that the Reinsch method gave the best results. By means of this method he had tested beer brewed under the employment of the various ingredients used in the brewing industries, and established the fact that not a single sample of the many tested showed even the minutest traces of arsenic. He also tested various grades and qualities of products such as glucose invert sugar, etc., of American and England manufacture. He found that the products of American origin were absolutely free from arsenic, whereas the English samples showed appreciable quantities of arsenic, but so minute that they could not have an injurious effect on the human system.

Yale University.—Official announcement is made of several important changes in the course of study, to go into effect with the next academical year. The required courses will be limited to the freshman year. During the following 3 years the students will be free to choose from a wide range of subjects. This will do away with the traditional requirements of a course in mental and moral science. All the important studies will be grouped under these heads: (1) Languages and literature; (2) mathematics and the natural sciences. Each student will be required to take connected courses during three years in one of these departments, and connected courses during 2 years in each of the other two.

A further important change in the administration of the curriculum is made by doing away with all "conditions." Hereafter a student must complete 60 hours of work in the class room during one year. The 60 hours he will distribute among 4 years, though a mature and well-prepared student will, under certain circumstances, be able to attain his bachelor's degree in three years.

INDUSTRIAL NOTES.

The Dunbar Fire Brick Company, of Dunbar, Pa., has booked an order for 1,000,000 brick, which they will ship to Victoria.

The Edgar Thomson Steel Works, of the Carnegie Steel Company, at Braddock, Pa., is filling an order for 6,000 tons of steel rails for the Great Eastern Railway of England.

The Atlas Bolt and Screw Company, of Cleveland, O., has changed the name of that part of its factory which manufactures cars, etc., to the Atlas Car and Manufacturing Company.

The firm of R. W. Cameron & Company, a New York shipping house, announces that Mr. Arthur Frederic Street, the son of the senior partner, has become a partner in the firm.

P. B. McCabe & Company, of Los Angeles, Cal., have supplied the Congress Mines of Arizona with 12 "Standard" concentrators. This contract was awarded after 3 months' competition with the various concentrators now on the market.

Messrs. William Barbour and John C. Pennington have been appointed receivers for the Rogers Locomotive Works at Paterson, N. J., for the purpose of closing up the affairs of the present company. The works are entirely solvent, and, indeed, have a large surplus.

Mr. C. O. Baker, of Baker & Company, Newark, N. J., in speaking of the situation of the platinum market, states that platinum has never been so high as at the present time, and that the demand has never been greater. All indications point to an early and substantial increase in the present quotations.

The Lidgerwood Manufacturing Company, of Brooklyn, N. Y., has secured an order for a large flat-rope, double-reel, steam-mining hoist for use in a 1,500-ft. shaft in a Mexican mine. Four big hoisting engines are about to be shipped to the Dominion Iron and Steel Company's plant at Cape Breton. The value of these orders is said to be about $20,000.

The William A. Harris Steam Engine Company, Providence, R. I., manufacturers of the Harris-Corliss engines, recently reorganized and has taken over the plant from the assignees. The officers are Frederick A. W. Harris, president and general manager; William A. Harris, Jr., vice-president and superintendent; E. Francis Crowell, secretary and treasurer.

The Allison Manufacturing Company, of Philadelphia, has secured an order for 35 passenger and freight cars from the Jamaica Government Railway. The value of the contract is said to be $25,000. Contracts for the furnishing of about 1,000 tons of coal a month are now being entered into for shipment to the Jamaica roads.

The Dickson Manufacturing Company, of Scranton, Pa., is breaking ground in the rear of its foundry for a large addition to its machine shops. It will be 50 by 115 ft. and 61 ft. in the clear, built of steel and brick, fitted with a large and powerful crane, and used exclusively for erecting and assembling. The new shop will have no new tools, with the exception of the crane.

The American Bridge Company has closed a contract with the crown agents for the colonies of Great Britain to furnish and erect on the line of the Uganda Railway in Africa 27 viaducts. This will require about 6,000 tons of steelwork. The viaducts consist of plate girder spans on towers, the highest tower being 112 ft. A. M. Rendel & Company, of London, Eng., are the engineers for the crown agents.

The American Machinery and Export Company, incorporated under the laws of New Jersey with a capital of $250,000, has opened offices in New York City. Besides dealing in all kinds of machinery for export, a special feature of the company will be to make purchases for foreign railroads. Mr. Wesley Meeteer, formerly with the Jackson & Sharp Company of Wilmington, Del., is vice-president and general manager.

The Brown Hoisting Machine Company, of

Cleveland, O., hopes to have much of its burnt plant rebuilt soon. It has roofed over the walls of the largest building and has a temporary shop 300 by 50 where it is completing work which cannot be done elsewhere. The company is at work on 2 other temporary shops in the yards adjoining the ruined plant. It has not yet adopted plans for the new plant. The buildings will be of steel and as nearly fireproof as possible. The machinery will be electrically driven.

The new plant of the Babcock & Wilcox Company at Bayonne, N. J., is in operation. The company has purchased 30 acres of land, with a frontage of 650 ft. on the Kill von Kull, and a depth of water of 25 ft. on the pier line. The plant is the largest of its kind in the world, the buildings completed having a floor area of about 160,000 sq. ft., to which will be added buildings of approximately 40,000 sq. ft. floor area. The plant is equipped with special tools, and has been designed to expedite the manufacture by reducing to the utmost the handling of material A spur track from the Central Railroad of New Jersey gives facilities for rail shipments.

The C. W. Hunt Company, of New York City, has concluded arrangements with various European manufacturers with a view to the manufacture of its coal-handling and other special machinery. The Babcock & Wilcox Company, of London and Glasgow, will build the Hunt machinery required throughout Great Britain and the colonies. Mastrand Helwig & Company, of Copenhagen, will manufacture equipments for Sweden, Norway and Denmark, while J. Polig & Company, of Cologne, will turn out the apparatus contracted for throughout Germany and Southern Continental Europe. M. Polig, son of the president of the Cologne concern, spent 2 years in the Hunt plant on Staten Island.

The General Electric Company, of Schenectady, N. Y., has secured a contract for the electric road in Tokio, Japan, worth nearly $120,000, that calls for 3 250-kilowatt direct-connected generators, 8 motor equipments of 30 H. P. each, line appliances, hangers, arms, carriers, etc., required for 35 miles of track, and a number of switchboards and other accessories. The American Steel and Wire Company will forward 35 miles of trolley wire and 20,000 rail bonds valued at $30,000. Three 400-H.-P. compound-condensing engines, valued at nearly $30,000, are being built by the Skinner Engine Company of Erie, Pa., while the Philadelphia Engineering Works are to manufacture some 20-ton electric traveling cranes. The Crane Company of Chicago is to supply all the requisite piping, fittings, valves and so forth, while the Deane shops of the International Pump Company will turn out 3 large pumping and condensing outfits. These orders are worth $50,000.

TRADE CATALOGUES.

The "Acetogen," an acetylene generator using lump calcium carbide, but provided with devices for using granulated or dust carbide, is described in an illustrated 8-page pamphlet published by F. Cortez Wilson & Company, of Chicago, Ill. This generator uses the "water to carbide" system and is claimed to make gas without heating to excess, thus giving a clear flame without smoky burners.

The "Victor" box-car loader for handling coal ore or other material is described in an 8-page pamphlet sent out by the Victor Box-Car Loader Company, of Denver, Colo. The company states that this loader has been designed to handle material in large quantities with the minimum of breakage. Among the advantages claimed are that it will handle either fine or coarse coal or both together, is easily regulated and requires inexpensive foundations.

The Bullock Manufacturing Company, of Chicago, Ill., sends out circulars calling attention to its diamond drills for prospecting coal, iron, zinc, lead, salt, gold, copper and gypsum deposits, and states that it makes a specialty of prospecting by contract. The company also manufactures "Champion" mine ventilators and a great variety of mining machinery, including hoists to fill any requirements and the "Monarch" rock drills and compressors. The company has the American rights of the Willans central valve engine, and makes Bullock-Corliss engines.

No. 21 of the Baldwin Locomotive Company's series of recent pamphlets entitled "Record of Recent Construction," describes, among other locomotives, those built for the Victorian Railways of Australia, of the compound consolidation type; the 10-wheel passenger locomotives built for the Paris & Orleans Railway Company, the consolidation and 6-coupled double-ender locomotives built for the Finland State Railways, the mogul locomotives built for the Oudh & Rohilkund Railway in India, and 6 coupled narrow-gauge locomotives for the Myjnbjow Maatschappij Herrero of Spain.

Brick-making machinery, including up and down-draft and continuous kilns, is described in a 32-page pamphlet published by the Illinois Supply and Construction Company, of St. Louis, Mo. The catalogue opens with a short treatise on brickmaking and then goes on to describe the Grath 4-fold triple-pressure dry clay press, the Grath 1-mold triple-pressure hand-power dry clay press for plain and ornamental brick, the Grath brick-grinding machine for grinding arch and radius brick, the Grath slack coal gas and coking furnaces, the Grath up-draft kiln, the Grath perforated floor down-draft kiln and the Grath continuous kiln.

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" what he needs he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondents who desire to purchase American goods of any kind, and shall be pleased to furnish them information, catalogues, etc.

All these services are rendered gratuitously in the interest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, and have no pecuniary interest in buying and selling goods of any kind.

GENERAL MINING NEWS.

Interstate Convention of Coal Miners and Operators.—This convention has been in session during the week, but no agreement regarding wages has been reached. The differential between pick and machine mining, and the run-of-mine basis for coal mined are the points most at issue. Representatives from Iowa and Michigan were excluded from the conference.

ARIZONA.

Yavapai County.

Black Diamond.—This company has a number of men at work under Superintendent John Henry at its property in the Dragoons.

CALIFORNIA.

Amador County.

(From Our Special Correspondent.)

Kirkwood.—The shaft at this mine 2½ miles south from Jackson is down 225 ft. in good ore.

Calaveras County.

(From Our Special Correspondent.)

Angels.—On the 500-ft. level of this mine adjoining the Utica on the north a large body of good ore has been opened. This is supposed to be the extension of the rich Bovee ledge.

Moon Mining Company.—This company has been organized to work a gold quartz property near the Newton Copper Mine. Four veins run through the property.

El Dorado County.

(From Our Special Correspondent.)

Burnham.—An 8-ft. ledge, assaying on an average of $50 per ton, is reported to have been uncovered at 100 ft. in this mine, near Georgetown.

Nevada County.

(From Our Special Correspondent.)

The boring machine which made tests of gravel at Shady Creek is being moved to Indian Valley, above Comptonville, where gravel will be tested with the idea of installing a dredger. English capital is back of the enterprise.

Franklin.—On this property in Willow Valley, worked by the Hussey Brothers, an 18-in. vein carrying good values in free gold and sulphurets, has been discovered.

Niagara.—This property, 1 mile east of Nevada City, has been bonded by J. Deasy, H. Morse and Hawkins Brothers, of San Francisco, who have begun development work.

Riverside County.

(From Our Special Correspondent.)

Golden Eagle.—Twelve tons of ore are to be shipped from this mine at West Riverside to the smelter as a test. Some of the ore assays very high.

San Diego County.

(From Our Special Correspondent.)

American Girl.—The new milling plant at this mine near Ogilby, consisting of Cornish rolls, will have a capacity of 200 tons per day. The cyanide plant in course of erection will also have the same caacity. The ledge is very large and low grade. With improved machinery it is thought the ore can be worked at a large profit.

Ulie.—This dredge at the "Potholes," about 25 miles north of Yuma, on the California side of the Colorado River, is worked by a Colorado syndicate successfully, it is said. In this vicinity a large area of the river banks has been located on each side.

Shasta County.

(From Our Special Correspondent.)

Beckwith Power Company.—About 50 men are employed on the ditch which is to bring the water from Mill Creek at a point near the old Hustis factory site to a point near Manton. The work is very slow on account of the rocky formation.

Hiatt Gold Mining Company.—This company has purchased the Cleveland Mine at Quartz Hill and will start work at an early date. The directors are: D. B. Hunt, H. B. Goodwin, W. E. Foster, A. C. Hamilton and J. D. Ludwig.

Washington.—This property, together with the Three Sisters and other adjoining claims in the French Gulch District, has been purchased by an Eastern syndicate, which will consolidate them into one company and prepare for work in the spirng. The group is said to be very promising.

Siskiyou County.

(From Our Special Correspondent.)

Gold Run.—The 10-stamp mill at this mine 8 miles south from Fork of Salmon is running continuously on high-grade ore. The property has been worked for 15 years, producing about $300,000. A. Dannenbrink is superintendent.

Siskiyou Hydraulic Mining Company.—The clean-ups made by this company from its property on the Klamath River, below Happy Camp, during the past season were very satisfactory and the heavy snowfall insures an ample water supply for the coming season.

Tuolumne County.

(From Our Special Correspondent.)

Confidence.—On the 350, 560 and 810-ft. levels of this mine 13 miles northeast from Sonora stoping is going on, while drifts are being continued on the 350 and 560-ft. The ore is high grade. The electrical system when completed will light the mine.

Densmore.—The Thorn Mill is to be moved over and added to the milling plant on this property near Parrott's Ferry. A cyanide plant is also to be installed. The ore averages about $12 in free gold, while the sulphurets are high-grade. The plant is run by water power.

Draper.—The new pumping plant at this mine at Soulsbyville installed by Krogh & Company, of San Francisco, consists of a 9½-in. Cornish pump, having a maximum capacity of 11,000 gals. per hour, at a depth of 500 ft. The same firm installed the wire-transmission plant by which power is conveyed from the waterwheel to the mill, a distance of over 2 miles. The other machinery installed comprises engines, air-compressors and 2 Krogh 2-stamp mills. L. Lahaise is superintendent.

Gerrymander Gold Mining and Milling Company.—This company has made the final payment on a property near Sonora, which it has been working under bond for 3 years. Development work will be continued and there is some talk of installing a smelter to treat the base ore in sight.

Harper.—The 1-stamp mill at this mine near Priest's is crushing out from $200 to $600 per month.

Mt. Jefferson.—At this mine electric power will take the place of steam, a new working shaft will be sunk and a chlorination or cyanide plant will be installed. J. M. Meighan is manager.

COLORADO.

Coal Miners' Strike.—The strike in the coal mines near Colorado Springs has been settled and the men have returned to work.

Boulder County.

Ingram.—This mine, at Salina, has been closed down. The reason for doing so is not stated. J. W. Sauer, who has been manager for some time, has severed his connection with the company.

Clear Creek County.

Pioneer Mining Company.—The Kokomo Pioneer Mill, at Dumont, is about completed. Fifteen stamps are reported now running and 15 more are in place. This mill treats the ore produced by the Pioneer company.

(From Our Special Correspondent.)

Atlantic & Pacific Railway and Tunnel Company.—A final decree of foreclosure on this property has been entered in the district court and the commissioner's sale is advertised to take place March 4th in Georgetown. Mary E. Hoyt is plaintiff in several sums of indebtedness, one of $673,044; another of $52,257; another of $3,120, together with costs. The first mortgage was given on February 23d, 1887, through M. M. ("Brick") Pomeroy, who promoted the scheme, better known as the "Pomeroy Tunnel." The sale includes a big group of claims in both Clear Creek and Summit counties, also railroad rights and other franchises. This is the final winding up of affairs. As soon as Mrs. Hoyt comes into possession of the property it is understood some development work may be started.

Kelly Tunnel.—This is a new undertaking to open up the silver mine of Silver Plume and vicinity. A. C. Gates, C. N. Voss, T. A. Murphy, E. S. Johnson, T. W. Griggs and C. J. Burt, of Davenport, Ia., are among the parties who have just visited the property. They claim to have let contracts for a 20 by 24 duplex compound compressor, two 60-H. P. boilers and engines. Work is already under way by hand.

Smelter Charges.—The rate on ore concentrates from Clear Creek and Gilpin counties has been reduced from $3.50 to $2 per ton by the Boston & Colorado Smelter, of Argo, and a Kansas City company. The trust smelters refuse to meet the new rate. The Argo smelter is the only one to come into direct competition with the pyritic smelter to be erected at Golden.

Gilpin County.

(From Our Special Correspondent.)

Mining Deeds and Transfers.—H. N. Sims to Argo Mining, Drainage and Transportation Company, the Actaeon and 8 other lodes in Russell District; J. M. Abrams to J. S. Babcock, ½ interest in Philadelphia lode; J. B. Mellor to H. Burk, the Colorado Star lode; C. C. Andrews to W. N. W. Blayney, the Wilber Lode in Nevada District; George Mariacher to Joseph W. Holman, the Mountain lode; A. J. Crist to R. L. Martin, Jr., the Gregory No. 2 and 3 lodes; C. F. Petersen to P. Petersen, the Ipava lode in Central District; Joshua Hunt to L. C. Albertson and G. W. Matthews, each a ¼ interest in the Osborne lode; Richard Dieckloff to W. Beddig, 1-12 interest, and to T. L. Curley 3-12 interest, in the Tuxedo lode.

Grand Central Gold Mining Company.—This company is to operate in this and Teller counties; capital stock, $1,500,000. Incorporators: H. H. Barber, H. D. McMaster and H. F. Avery.

Gunnison County.

Colorado Smelting and Mining Company.—This company is said to control over 3,000 acres of mineral land, containing hundreds of claims, in Pitkin District. It is incorporated in New Jersey with a capital stock of $5,000,000. Albert E. Reynolds, of Denver, one of the incorporators, is chief promoter. C. A. Starbuck and J. C. Johnson, of New York City,are also incorporators. The territory is under the management of William J. Fine. The purchase includes practically all of the West Mountain, extending from the town of Pitkin up the mountain to what is known as Chicago Park, including this park and the Fairview and Cleopatra mines, over 300 claims in a body. The territory is 5 miles long and from 1 to 2 in width. Silver is the highest value in the ore of the district, but gold, copper and lead also are found.

Lake County—Leadville.

(From Our Special Correspondent.)

Leadville Shipments.—The perfect weather throughout January enabled the mines to keep up a heavy production, and the output was about 75,000 tons of all classes of ore.

A. M. W.—This combination will become a producer on a large scale through its new workings on the Wolftone, where a great mass of sulphides has been opened up and shipments will be over 200 tons a day.

Ballard.—In addition to 20 tons of good gold ore shipped daily this property is producing some excellent bismuth ore containing 10 to 20% of the metal. This goes to Europe via Galveston and is paid for at the rate of $15 per unit.

Banker Mining Company.—At the 800 and 1,100-ft. levels 2 separate veins have been found.

Bison.—This property is now being operated by the Caribou Mining Company, who are having a great struggle with water. A great iron production was made in the past from the upper levels and now the shaft is being sent deeper to open the lower contacts. The work is progressing slowly on account of water and sand.

California Gulch Mining Company.—At the annual meeting Messrs. A. Sherwin, J. W. Newell, B. F. Follett, H. Gaw and R. R. Moore were elected directors. Two foot of ore in the drift was found while the meeting was in session. The annual reports show that $50,259 has been expended in the new shaft, including machinery, etc. The shaft is 530 ft. deep and drift is in over 800 ft. The original price of 30c. a share was maintained on an additional issue of 100,000 shares.

Cloud City Mining Company.—This company has taken its stock off the local market, having disposed of nearly all the 50,000 shares offered. Sinking is being pushed vigorously.

Garbutt.—This old-time property, long idle, is again a producer. The 3 claims in the group are operated by lessees. At the 400-ft. level 15 tons daily of fair-grade silver-gold ore are mined. The property lies near the Ibex on the gold belt.

Home Extension.—A station pump will be put in at once at the 480 level, with a capacity of 700 gals., and will probably handle all the water that the shaft will make. At present the water is held by a bailer, capacity 350 gals.

Leadville Home Mining Company.—Shipments from the Starr, Penrose and Bon Air shafts are over 400 tons a day. In the new drifts of the Penrose 11 ft. of carbonate ore, averaging 63 oz. silver, has been opened up, while in the Starr a new 5-ft. vein of ore, carrying chlorides running as high as 70% lead, is cut. At the Bon Air property sinking has started. The water flow has shown a steady decrease the past 6 months: At a meeting of the directors to fill vacancies caused by the resignation of President John Harvey and Director H. C. Mitchell the following officers were elected: President, W. A. Polkinghorn; vice-president, A. Sherwin; treasurer, E. J. McCarty; directors, A. Lumsden, J. M. Maxwell. E. G. Wigginton was re-appointed as secretary. The annual meeting of the company occurs in April.

Nisi Prius Leasing Company.—The most important work is the new shaft on the Crown Point, where at 700 ft. prospecting work is now going on. The proposition is the most important on that part of California Gulch.

Nubian Mining Company.—While both the Midland and P. O. S. shafts are shipping the most important new finds are in the latter claim, where some stuff being sacked assays 1,000 oz. silver and 50% lead.

Penn.—During the latter part of 1900 fully 60% of the force were on development work. Now shipments have increased and ore is coming from Nos. 1, 2 and 3 shafts. Sinking is also going on at No. 1 shaft. Shipments are curtailed to 75 tons per day, but will soon be increased, while arrangements are about completed for sinking to the sulphide zone on No. 1.

Printer Girl.—Forty years ago this mine in California Gulch was a famous producer, but for several years has been idle. A proposition is on foot to drive a lateral from the Yak Tunnel, a few hundred feet only, to strike the Printer Girl at a depth of 1,000 ft.

Saxon Mining Company.—This is the Sheedy-Kountz combination. The shaft is down 130 ft. and has encountered water. A pump is being installed and sinking will be resumed.

Ouray County.

Blaine.—The manager of this group, just north of Sheffels, is pushing work on the tunnel with steam drills and by spring expects to have 50 cars of ore ready for shipment from the bins. Shipments are made via Ridgway, 15 miles north, and it is too expensive to keep the road open in the winter that distance. This group is owned and operated by men in Toronto, Canada.

Camp Bird.—The adverse suit over the Deadwood Mill site of this mine has been continued to February 18th. Serious allegations were made, one side charging blackmail and the other intimidation. The protestants allege that the ground that the Camp Bird Company needs for its new mill is mineral land.

Camp Bird Extension Company.—The company is pushing work on its tunnel and some good ore running $40 to the ton is being stored for shipment in the spring. The tunnel will extend 2,500 ft. when completed. It is expected to cross the famous Camp Bird vein when directly under the apex of the mountain. The 13 claims of the company laid idle for 15 years until Judge Hulaniski formed a stock company and made a sale to a syndicate, of which J. H. Robin, of Silverton, is the president.

San Miguel County.

(From Our Special Correspondent.)

Alta.—This mine, in Turkey Creek Basin, is considered the biggest new proposition in the county. Worked during 1900 for development, it made an output of $75,000, a large percentage

Butterfly Terrible.—This company, in Ophir District, is rapidly becoming a notable producer. Its output for part of the year from a 30-stamp mill was $80,00, of which 90% was gold. The treasury stock sold last summer was placed at 19c., now quoted at 30c.

Liberty Bell.—This company temporarily hung up its 80 stamps while a new main cable was put up on the 2-mile tramway, but is again crushing 300 tons of ore daily. An improved cyanide process for the mill tailings has proven remarkably successful. During 1900 the capacity of the milling plant was doubled, and a gross output of between $600,000 and $700,000 is confidently expected in 1901. Output for 1900 was $300,000, principally gold.

Smuggler-Union.—This company is overhauling its old mill, and adding 10 stamps to its present complement of 50. When completed, the company will have 2 mills of 60 stamps each, with a combined crushing capacity of 400 tons daily. The Pennsylvania Tunnel, 3,000 ft. long, has cut the Smuggler vein 700 ft. below the Bullion Tunnel level, and a new aerial tramway connects it with the mill. The new tunnel opens the vein 1,800 ft. below the surface, and gives access to a large ore body.

Telluride Power Company.—This company has completed its new electric plant at Vance Junction on the line of the Denver & Rio Grande Southern Railroad, having a capacity of 2,000 H. P., duplicating that installed several years ago at the junction of Howard and South Forks of the San Miguel River. Substantial flume, 28,000 ft. long, takes the water from the raceway of the old plant, and delivers it to the new under a head of 520 ft. The Power Company is already supplying 10 large milling plants, including the Camp Bird, 27½ miles away, besides lighting the towns of Telluride and Ophir. The enlargement of old mill and the erection of new one will require all the energy developed.

Teller County—Cripple Creek.

(From Our Special Correspondent.)

C. K. & N. Gold Mining Company.—A 15-H. P. electric hoist is being installed on the Raaler claim. Power is furnished by the Colorado Electric Power Company from its new line on the west slope of Beacon Hill. The Raaler lies along the west side of the Columbia No. 1 of the Cripple Creek Columbia Company, which has lately created considerable stir.

Independence Consolidated Gold Mining Company.—Pipes are being laid from the Hull City Placer to the Findley Mine on Bull Hill to convey air for an increased number of drills.

Kaffir Gold Mining Company.—An option for a 2-year lease on the Squaw Mountain property of this company has been granted to George Bentley and associates. The lease calls for 100 ft. of sinking and the installation of a steam plant. Mr. Bentley was one of the first workers on the property.

Pinnacle Gold Mining Company.—A good strike was recently made on the Lansing Claim on the block of ground once worked by Whipp and Glenn, where the company is now busy. Among other lessees working is C. J. Moore, of Cripple Creek.

Roanoke.—It is reported that this mine will sink to the 600-ft. point, and that a new plant of machinery has been ordered. This property is on Mineral Hill, with no producers in the immediate vicinity.

IDAHO.

Blaine County.

Golden Star.—At this mine, near Hailey, drifting goes on at the 300-ft. level. The ore is said to run in gold, silver and copper. A 10-stamp has been erected.

Shoshone County.

Snow Storm Mining Company.—This company has some copper claims 4 miles east of Mullan. It recently shipped the first car-load of copper ore sent out from the Coeur d'Alenes. Smelter returns, it is said, showed 11.5% copper, 15 oz. silver to the ton. A 230-ft. tunnel to cut the ledge at a depth of 195 ft. is now in 195 ft.

IOWA.

Monroe County.

(From Our Special Correspondent.)

Chicago & Northwestern Railroad Company.—This company has completed the extension of the Belle-Plaine-Muchachinock line to its new mines at Buxton, a distance of 23 miles. The company has invested $500,000 in its mining plant at Buxton and has several thousand acres underlaid by a 6 to 8-ft. seam of bituminous coal. Three hundred houses have been erected and a large store building and office. The plant is in charge of Ben Buxton, of Oskaloosa, who has been in charge of the several mines of the Northwestern Company for many years.

LOUISIANA.

Saint Mary Parish.

Gulf Company.—It is stated that the management of this salt company is to be radically changed, and that John W. Gates and some of his associates will provide financial backing. Charles Q. Freeman, of the Retsof mines, New York, will assume charge of the management. C. B. Wiser, the former manager, it is understood, will retire from the position, which he has held since the operations of the Gulf Company began. Mr. Pratt, who accompanied Manager Freeman, will serve as a civil engineer until the new construction work is completed. Chas. H. Root, of Retsof, N. Y., will take hold of the transportation end of the business at Belle Isle.

MAINE.

Hancock County.

Standard Granite Company.—This company, of Mount Desert, C. J. Hall president, has contracted to furnish 12,000 tons of rough stone for the United States Government coaling station, about to be constructed at East Lamoine. This means the employment of 300 men. It also has another contract for furnishing stone for the National Bank of Commerce building to be erected at St. Louis, requiring from 8 months to a year to fill. The company in 1899 furnished stone for the new United States Mint building at Philadelphia.

MICHIGAN.

Copper—Houghton County.

Calumet & Hecla.—Work on the Hecla stamp mill addition at Lake Linden is rushed. The addition will be 300 by 175 ft. and will contain 6 heads, giving the mill a total capacity of 11 heads. The building is expected to be completed by April 15th. The American Steel and Iron Company, of New York City, has the contract.

Work on the new boiler house, 100 by 50 ft., opposite the Calumet mill, has started. The Wisconsin Bridge and Iron Company, of Milwaukee, has the contract.

Iron—Gogebic Range.

Colby.—Messrs. Corrigan, McKinney & Company, of Cleveland, O., deny the report that the West Colby Mining Company has taken an option on this mine, and state that they have never conducted any negotiations looking to an option on the Colby.

Dunn Iron Company.—At the Patrus Mine No. 5 shaft may be sunk to the greatest depth yet attained on the range, an addition of 600 ft. being planned. The mine will open into many ore bodies at that depth. The Palms is much larger than has been supposed and will be still further developed.

Jackpot.—Jones and Laughlins are deepening the Jackpot Mine and will sink No. 1 shaft to 700 ft. The force is being increased and the mine is looking extremely well. The 1901 shipments will be larger than ever.

Norrie.—The probability that several shafts will have to be abandoned owing to the settling of the ground through the operation of the caving system, has led the Oliver Mining Company to start a new shaft in the solid rock of the foot-wall, which is expected to reach ore some time this year. This shaft is the largest ever sunk on this range. It will have 4 compartments and will be supported by steel beams instead of wooden timbers, like that of the Pioneer on the Vermilion Range, owned by the same company. This will minimize the danger from fire and prevent accidents through rotten timbers.

Tilden.—At this Oliver property mines are reopening No. 10 shaft and have been developing very actively since the close of shipments. The mine is in shape for a larger production than ever. The mining force will soon be increased.

Iron—Marquette Range.

Cleveland-Cliffs Iron Company.—This company has secured an option on about 200 acres of mining land at Negaunee. Options upon the mineral rights of this land were acquired some time ago by Geo. J. Maas, who found ore at a depth of 575 ft. Another hole showed Bessemer ore at 1,075 ft. Five diamond drills have started.

Riverside.—This old mine on the same formation as the Republic, but about 4 miles west of Republic, has closed down and the machinery is being removed by the Oliver Iron Mining Company, which took hold of it about a year ago under lease from the Michigan Land and Iron Company. It is thought that no iron ore bodies of any size were found.

(From Our Special Correspondent.)

Chester Mining Company.—This company, working the old Rolling Mill Mine on the Negaunee range, at its annual meeting in Duluth elected M. M. Drake, of Buffalo; J. H. Bartow, of Cleveland; Jas. Piper, of Negaunee, and Jos. and R. M. Sellwood, of Duluth, as directors, with the two Sellwoods as president and secretary and treasurer respectively. Piper is manager. The mine shipped last year a small amount of ore and had some left in stock. It produces a lean Bessemer.

Iron—Menominee Range.

Hemlock.—A new Gates crusher is in operation at this mine near Amasa.

(From Our Special Correspondent.)

The Chicago, Milwaukee & St. Paul road has let a contract for its extension from Iron Mountain to Quinnesec to McIntosh Brothers, of Milwaukee. The extension will tap the mines of the Antoine Ore Company, of the Oliver Ore Mining Company, the Pewabic, Cuff, Indiana and Cundy. The contract is a declaration of war between the Milwaukee and the Northwestern roads, the latter of which has had a practical monopoly of iron ore hauling on the Menominee range. Last year the Milwaukee built a piece of line that reached into the Crystal Falls District and built an ore dock at Escanaba, but was not able to haul any ore during the year; now it proposes to get still further into the field, and will by June reach nearly all the chief mine centers of the Menominee range.

MINNESOTA.

(From Our Special Correspondent.)

The Duluth & Iron Range Road has suspended action in rebuilding 2 of its Two Harbors docks. The road proposes to begin the shipment of Federal Steel ore at the earliest moment in the spring and is afraid that the dock work cannot be completed in time. Shipments will begin early and will be pushed all the season.

Iron—Mesabi Range.

(From Our Special Correspondent.)

Chisholm.—The purchase of this property by the American Mining Company for $65,000 and an additional royalty of 10c. a ton, is about the highest price ever paid for an iron mine in the Lake Superior country, tonnage and grade considered. The additional 10c. a ton is spread over all the ore to be mined.

Fay.—This mine, near Virginia, will be opened. It is rumored that extensive stripping is proposed, but most of the development will probably be underground. The Fay was bought a year ago by the Minnesota Iron Company, at $110,000 for a 30c. and 35c. lease. A road was built to it, but no ore was mined.

Sauntry.—This mine will mine largely this year. The American Mining Company will strip on an enormous scale.

Stevens.—The 11-mile extension of the Duluth, Missabe & Northern road to this new mine will cost about $300,000. About 500 men are now working on it. There will be 2 very large plate girder bridges and some heavy cuts.

Cook County.

(From Our Special Correspondent.)

North American Mining Company.—This company is exploring the Gunflint lake deposits once partially opened by Paulson, of Minneapolis. It is reported by members of the company that a drift run from No. 1 shaft found ore of high grade. The company has been at work for nearly a year.

MISSOURI.

Jasper County.

(From Our Special Correspondent.)

Joplin Ore Market.—The market for zinc ore advanced last week, though ore buyers contended that there was no advance and did not load 15 or 20 cars of ore, for which they paid $1.50 per ton more than the previous week.

The best price actually paid for ore loaded was $27 per ton at the bins, but 5 cars on the ground of the Missouri Lead and Zinc Company at Joplin sold for $27.50 per ton, while $28 per ton was offered and refused for a lot of 1,500 tons belonging to one of the great producers of Carterville. The ore from the Three Friends lease at Belleville sold for $29.50 per ton on an assay basis, the Aurora ore sold at an average of $24.50 per ton and the balance of the district ore according to quality, down to $14 per ton for silicate. Lead sold at $22.50 per 1,000, the same as the previous week. Following is the turn-in of the Joplin District for the week ending February 2d.

	Zinc lbs.	Lead lbs.	Value.
Joplin	2,979,050	428,470	$45,082
Galena-Empire	1,582,060	163,790	22,570
Carterville	1,555,710	156,510	20,634
Belleville	341,580	7,840	.....
Central City	353,880	4,600	4,350
Oronogo	466,230	12,730	6,097
Webb City	712,220	27,870	8,461
Peacock City	132,920	20,630	2,126
Spurgeon	165,780	9,270	1,843
Roaring Springs	154,170	8,150	1,884
Neck City	257,870	2,500	3,537
Aurora	1,099,000	17,510	12,232
Carl Junction	292,380	.....	3,801
Ozark	.....	43,560	980
Cave Springs	158,400	6,420	2,045
Duenweg	161,700	54,340	3,740
Seneca	87,880	12,160	770
Granby	277,000	12,000	2,300
Alba	77,340	.....	1,005
Springs City	57,440	33,490	1,453
Beef Branch	.....	30,300	682
Stotts City	.....	22,050	496
District total	10,902,710	1,074,190	$150,411
Total 5 weeks	47,556,780	5,834,220	$695,083

Zinc value, $562,199; lead value, $132,884; value both ores, $695,083.

During the corresponding week last year the best grades of zinc ore sold for $34.50 per ton and lead at $27.75 per 1,000, but sales were less by 861,860 lbs. of zinc and 217,310 lbs. of lead and the value greater by $19,165. For the first 5 weeks last year the lead sales were less by 614,120 lbs., the zinc sales greater by 614,120 lbs. and the value greater by $169,199. As compared with the previous week, the sales were greater by 1,341,210 lbs. of zinc, 217,130 lbs. of lead and the value greater by $13,146.

A 1,280-acre tract of land in Newton County, about 12 miles southeast of Joplin, has been purchased by George W. Layne, of Joplin, and R. M. Bailey and Walter Woodman, of Boston, for $12,800, and will be developed.

An undivided ½ interest in the 160-acre fee at Wentworth, known as the J. W. Garretson land, has been sold to F. E. Rogers, of New York, for Edwin Ohl, of New York; Charles C. Graves, of Boston, and P. M. Walt, of Cleveland, O. The great Gobbler mines recently purchased by Frank Rockefeller, of Cleveland, O., are on this land, and as Mr. Rockefeller purchased only the lease, it is believed that he is one of the parties to the deal.

Missouri-Kansas Zinc Miners' Association.—This association has perfected its organization with a capital of $100,000. Over one-third of the capital stock has been subscribed and it is expected that the full amount will be taken. The association will make a contract with producers for one-fourth of the total output for one year on an assay basis of $25 per ton for 60% zinc ore. If any profit is made on it, it will be returned to the stockholders pro rata at the close of the year. Foreign smelters agree to take ore, providing the zinc producers send enough to keep the supply of spelter sufficient for domestic consumption, without leaving any surplus to ship abroad to demoralize the English market. A shut-down of mills producing 2,500 tons of high-grade zinc ore per week has been ordered for February and the owners of mills who signed the contract closed their mills on February 4th and will do nothing but repairs and dead work during the month.

Gobbler Mining and Smelting Company.—This company has been incorporated by Frank Rockefeller and others with a capital of $350,000, to work the 440-acre tract recently purchased by Mr. Rockefeller at Wentworth, Newton County. Mr. Rockefeller owns 2,450 shares of the stock and the other 950 shares are held by Utley Wedge, of Bayonne, N. J., who has come out to assume charge as general manager. Frank Siegal and R. D. Swain, of Kansas City, and Robert K. Pitkin, of Joplin, are also interested.

Joplin, Spurgeon & Texas Railroad.—A line 20 miles long from Joplin to Spurgeon, Newton County, Mo., is to be built by H. E. Bucklen, of Chicago, and others. The surveys are already completed. The headquarters of the road will be in Joplin and construction work will be started as soon as the engineer in charge, W. H. Rosecrans, returns from Chicago. The road will parallel the Kansas City Southern road as far as Tipton Ford, a distance of 10 miles, and from Spurgeon spurs will tap the other mining camps in Newton County, which have heretofore been without railroad facilities. Mr. Bucklen has invested nearly $200,000 in mines at and near Spurgeon and the road will add greatly to the value of his property.

Little Giant.—This mine, on the ground of the Oxford Mining Company, at Lehigh, was sold last week by George W. Layne, of Joplin, to Des Moines, Ia., parties for $10,000.

Silent Friend.—This mine on the Granby land in Chitwood Hollow at Joplin, with the lease of 9 lots and the mine and 5 lots lease of the Crocker Mining Company, adjoining, have been purchased by Adam Scott, of Joplin, who immediately sold a ¾ interest to Ford & Wood, of Memphis, Tenn., who have organized the Tennessee Mining Company to work the 2 properties with Adam Scott as general manager. The consideration for the ¾ interest was $15,000. A mill will be built by the new owners.

Wasatch Mining Company.—This company on North Heights at Joplin has opened 2 new zinc ore runs on its 8-acre lease of the Granby land. The first drill-hole cut, a 20-ft. face of ore, was opened and the second hole showed 4 ft. of lead and 52 ft. of jack. Capt. James Rice, of Cleveland, O., is the principal owner and Gardner Barker, of Joplin, is the superintendent.

St. Francois County.

(From Our Special Correspondent.)

Three railroads are under consideration to give an Eastern outlet to the St. Francois leadbelt, and one is under construction that has strong backing. This will introduce needed competition and permit high-grade coals from southern Illinois, the best coal in the St. Louis market to be shipped in.

Philadelphia men are investigating one of the new properties, while Clarence King, of New York City, is experting the Union Company for English capitalists, and the Guggenheims have returned to consider several properties.

The continued high price of diamonds has shut down nearly all the prospecting drills. The St. Joe Company has laid up 6 of its drills, the Penicaut has laid up 3. The reaming for old lost bits continues; the Elizabeth has recovered two, the St. Joe 12 and the Eureka is after 2.

The rapid advance in value of land in the lead belt is well shown in the Murrell tract on Big River, which was bought a year ago for $100 per acre, and has just been optioned at $300, though it is undrilled wild land. The Brockmeyer syndicate, of St. Louis, bought a tract for $200 an acre and after drilling it sold it to the St. Joe Company for $1,000 an acre, though it is wild land and over 2 miles from the railroad.

Central Company.—This company has finished its Rogers, or No. 3, shaft, which shows up 12 ft. of very rich ore. It has just finished a new roasting furnace and is now building another blast furnace. These improvements have not absorbed all profits, as the company has just paid its 44th dividend.

Columbia.—This company is now erecting its smelting plant in East St. Louis to be near the coal-fields; it will be equipped with 4 Scotch hearths.

MONTANA.

Eight-hour Law.—The governor of the State signed an 8-hour law on February 2d. The bill applies to all mines and smelteries in the State and becomes effective on May 1st.

Beaverhead County.

(From Our Special Correspondent.)

Greenwood Mining and Milling Company.—At a directors' meeting at Melrose it was decided to add a pneumatic cyanide plant to the mill and operate the concentrator as usual, but cyanide the tailings. It is intended to have the new plant running by May 1st.

Old Faithful.—The mill on this property near

Dillon has been sold at a sheriff's sale. The mine itself is under bond to local parties who intend to build a mill suitable to the ore.

Polaris.—Four 6-horse teams are hauling ore from this mine to Dillon for shipment to East Helma.

Queen of the Hills.—This property, near Dewey's Flat, is under bond to C. W. Clark and Geo. McFarlan, of Butte. The bond is for $75,000 and runs to next July; several thousand dollars have already been paid on the bond.

Broadwater County.

(From Our Special Correspondent.)

Iron Mask.—This property, owned by J. C. Knouse, of Townsend, will be worked under lease and bond for $10,000 by a Mr. Flanagan, of Chicago. It is a silver-lead property and has shipped about $25,000 worth of ore.

Stockton Copper Mining Company.—This company has been organized to work the Stockton Copper Mine near Radersburg. The capital stock is $50,000, with Elmer Smith, Alexander Walker and John Armitage, of Butte, incorporators.

Carbon County.

Carbonado.—The coal mines at this place, owned by the Anaconda Copper Company, have closed down. The company is getting its coal from the Belt and the Diamondville mines. The output of the Carbonado mines at the time work was stopped was about 800 tons per day.

Cascade County.

Boston & Montana.—On account of the recent trouble experienced by this company with its water power at Great Falls, the company proposes installing an auxiliary steam-power plant. This will require at least 2 power plants, one of 1,500 H. P., and another of 1,000 H. P. The Missouri River a few weeks ago was lower than ever known. The company secures its electric power from the fall. There was no difficulty about securing water for the concentrators, but the power fell off so much that the refinery was closed down for a while, and only 1,000 tons of ore was smelted daily, whereas the usual amount handled is 3,000 tons. The power was reduced 1-3 all around, but since the river has risen matters are running along as usual. The company endeavored to install a temporary steam plant, but will take its time and install just such a plant as is wanted.

Homestake Mining Company.—Work on the Honduras Group of claims is being pushed. The properties are about 12 miles northwest of Butte. The shaft, which is to be 150 feet, is down 60 ft. deep in porphyry. Assays show gold and silver. The promoters are all Butte and Anaconda men. Five men are employed.

Deer Lodge County.

Gladstone Mining Company.—This company controls the Gladstone Group of claims, 9 miles west of Pioneer, on which some development work has been done. The company is capitalized at $500,000. J. W. Turner, of New York City, is president and L. A. Loomis, secretary and treasurer.

Granite County.

(From Our Special Correspondent.)

Sapphire mines are being developed on Upper Rock Creek. A company of Eastern men has purchased several claims and has a number of men at work. It is said that stones from the property have been pronounced high-class and the ground will be worked to its full capacity.

Butte men are in Philipsburg making arrangements for a lease and bond on a promising copper property about 6 miles from the town. The proposition is a $70,000 bond, to be taken up within 6 months. Men will be put on to develop the claim and then talk of putting in reduction works in the spring.

Hope.—This mine near Philipsburg, employing about 40 men, has finished 2 months' of dead work and is again producing. This mine is in a line formation and is prospected with diamond drills, as the deposits are pockety. It has been worked over 20 years and nearly the hill on which it lies has been honeycombed in extracting pockets. The mill recently finished a 2-weeks' trial run, producing 12 bars of high-grade silver bullion. There is enough ore in sight to insure a 6-months' run.

Moroni.—A strike is reported in this tunnel, the property of Dr. Merrell. At 175 ft. a 4-ft. lead of good silver-lead ore was opened. Jerry Linnehan, foreman of the property, declines to say whether the ore will be shipped or treated at home.

Jefferson County.

Eva May.—This mine has closed its mill for repairs. Development will continue in the mine.

Madison County.

Conrey Placer Mining Company.—This company is building a new dredge boat to cost about $65,000.

Meagher County.

Copperopolis.—This mine at Copperopolis is shipping copper ore steadily, it is said. No definite statements regarding the value of the ore and size of the ore body are given.

(From Our Special Correspondent.)

Copperopolis.—Thirty years ago "Harper's Magazine" contained an illustrated description of this camp and 25 years ago Marcus Daly did some mining there, shipping by bull team to Fort Benton, whence ore was sent to Europe for treatment. Since that time little attention has been given the district owing to its remoteness from transportation. Two years ago Messrs. Reynolds & McDowell, of Butte, became interested and now own exclusively 46 mining claims, all showing more or less ore. These claims extend along the main lode 5 miles. The deepest shaft in the camp is on the Northern Pacific and is down 500 ft. About 100 miners are employed, all told, on development work and 3 steam hoists are in use. The net shipments for the past 8 months amounted to $75,000 and now average $25,000 per month. The ore is sent to Butte for treatment. The smelter paying 12c. a pound for the copper. The value in gold and silver is practically nothing. The ore is principally cuprite, chalcocite and chalcopyrite. Messrs. Reynolds & McDowell have invested $150,000 in the camp and practically control the district. A townsite of 40 acres is laid out. The enterprise is private, with no stock to sell.

Park County.

Robinson Mining Company.—This company, at Jardine, has temporarily suspended work on tunnel No. 5, though on tunnel No. 4 a double shift of miners are steadily employed. The mill started late in December and the ore in the bins and on the dump, probably amounting to 1,000 tons or more, was run through. The results were entirely satisfactory. The tailings from the plates were run over Frue vanners and James tables.

St. Julien.—This mine at Chico, owned by Nolan Brothers, of Livingston, and others, recently shipped a car of concentrates.

White.—These coal mines at Trail Creek have closed down for the winter. No reason is given.

Milwaukee-Natural Bridge Gold and Copper Mining Company.—P. J. Donnelly has sold the 9 claims to this company. Consideration, $8,500.

Silver Bow County.

(From Our Special Correspondent.)

Minnie Healey.—A Butte paper says that the Boston & Montana Company has purchased this mine from Miles Finlen, the consideration being $139,500. Negotiations have been in progress for some weeks for the purchase of the ground which adjoins the Leonard shaft. John D. Allport, at the time of his death, owned an interest in the mine. After his death a deed purporting to convey the interest to Mrs. Fegen-Bush, of Denver, was filed, which was shown to be a forgery. Subsequently Mr. Finlen purchased the property from the Allport heirs and deposited the money in the bank. Then came some more juggling, in which F. Augustus Heinze alleged he had also purchased some interests in the property. The Minnie Healey is operated by Receiver Wilson, who was appointed by Judge Clancy.

Blackstone Mining Company.—This company has filed articles of incorporation with Alex. Gray, Frank Trainer and Ernest J. Schwefel, trustees. The capital stock is 100,000 shares at 10s. each.

Butte Mining and Development Company.—The 3-compartment shaft being sunk on the Emma is down 225 ft.

Butte Sampling Works.—A reduction on treating the silicious ores has been made. The price now conforms with the figures offered by Tacoma parties.

Smokehouse.—Sinking has been resumed at this shaft in Butte. A single deck cage is in use and a bucket is used to raise the rock, it being suspended below the cage. The shaft is now down 420 ft. and a station is being cut at the 400. The 20 ft. below will be used for a sump. It is also likely that a crosscut will be run at this point. The vein encountered some weeks ago was cut through 60 or 70 ft. The ore was low grade and running not more than $6 or $7 a ton, mostly in silver, with a trace of copper.

Speculator.—Superintendent Wishon is driving the cross-cut on the 1,200 level, working the machine men on 6-hour shifts. The ore is in part sent to the Golden Reward Smelter at Deadwood and part to the local works.

West Olive Branch.—This silver property, situated near the Colorado Smelter at Butte, is to be worked under a lease and bond by Victor Hoffman & Company, who will erect a hoist.

NEVADA.

White Pine County.

(From Our Special Correspondent.)

Copper Flat District.—The Messrs. Bray, together with Mr. H. Martin, of New York City, are to develop copper ledges in this district. The vein is probably directly connected with that of the Pilot Knob Group. The work is much deterred by water at the 50-ft. level.

Ely Mining and Milling Company.—The last shipment of machinery for the 50-ton cyanide plant has been received and the mill is about to start. The ore will be dried and crushed to a 20 mesh and cyanided directly. J. G. Marx is mine superintendent and W. H. Wickham, of Denver, mill superintendent. The property is owned in Salt Lake by Messrs. Lynn, Salisbury, Thompson and Farnsworth.

Pilot Knob Copper Group.—In the fall of 1900 about 30 claims in this district were bonded to Messrs. Jennings, Giroux and Kimberly, of Denver, Colo., and Jerome, Ariz. These claims gave surface indications of copper, but were principally noticeable for large iron-capped ledges of quartz. Shafts since sunk 30 to 100 ft. are now in an iron oxide that shows a large per cent. of native copper and warrants the belief that the ledge, 100 ft. wide, will become a valuable copper vein below the zone of oxydation.

NEW MEXICO.

Bernalillo County.

Coal Miners' Strike.—The coal mines at Gallup are reported still idle, but those at Clarkville, owned by W. A. Clark, of Montana, are mining. The two mines are about 5 miles apart. The Santa Fe Railroad, which relied on the Gallup mines for its supply, is obliged to confiscate coal in transit from Clarkville to keep running. On this account the smelters at Jerome, Ariz., are not able to run steadily.

NEW YORK.

Saint Lawrence County.

Caledonia.—These iron mines, 6 miles west of Governeur, will, it is said, be worked full-handed. The ore is low grade and the mine has been closed down most of the time since 1893.

NORTH CAROLINA.

Cabarrus County.

(From Our Special Correspondent.)

Whitney Reduction Works.—This concern, operating the McMacken Mine near Gold Hill, is in full blast day and night, treating about 20 tons of gold ore daily by concentration and chlorination. Geo. I. Whitney, banker, of Pittsburg, Pa., and H. L. W. Hyde, his secretary, were at the mine for the week ending January 19th. The Southern Railroad is putting in a 3-mile spur from the main line at Gold Hill.

Guilford County.

(From Our Special Correspondent.)

Deep River.—This mine is being worked by a party of New York men prominent among whom are Simonds & Wainwright, the well-known chemists. F. W. Harrell is manager at the mines. The ore is an auriferous copper pyrites. One car-load shipped about a month ago went 7% copper and $30 gold per ton.

Rowan County.

(From Our Special Correspondent.)

Gold Hill Copper Company.—This mine was advertised to be sold by the receiver on January 28th. The company paid up the pressing accounts, amounting to some $17,000, and have had the sale postponed.

OREGON.

Baker County.

Columbia.—A Minneapolis company is working this property in Cracker Creek District.

Gold Fields of Oregon.—At a recent meeting of the company, at Baker City, arrangements were made for gold dredging operations on the Snake River. The caiptal stock of the corporation was increased from $100,000 to $500,000, with the purpose of acquiring an additional section of placer ground, and adding 1, and perhaps 2, dredges. Capt. C. H. Thompson, of Spokane, is president of the company; J. S. Kenyon, of Baker City, vice-president; E. S. McComas, of Baker City, secretary, and Senator William Smith, of Baker City, treasurer. The company last season completed the Kankakee dredger, the largest plant on Snake River, at a point about 10 miles from Palmer, Idaho. The dredger was completed too late to complete more than a test. It has a capacity of 100 yds. of sand per hour. The dredger barge is 130 ft. long, and the stacker barge 100 ft. long.

North Pole.—At this mine a 1¼-mile aerial tramway is nearly completed. It will have a capacity of 10 tons per hour.

Simmons.—This placer mine at Waldo is using 2 giants.

White Swan Mining and Milling Company.—Letson Balliet, general manager and promoter of this Des Moines, Ia., company, recently bought at sheriff's sale the White Swan mines, 6 miles northeast of Baker City, for $3,017. The property embraces the White Swan quartz claim No. 1, White Swan No. 2, and the Red Ledge. The sale was pursuant to an execution and order of sale issued upon a judgment in favor of Cato J. Johns and P. Basche and against the company for the sum of $2,279 and the further sum of $350 attorney's fees, together with costs. At the sale the property was bid in for Mr. Balliet. It was expected that the White Swan Mining and Milling Company, against whom the judgment was rendered, would bid for the property, but that corporation is apparently not only without money but without a mine.

Wimer.—This hydraulic mine at Waldo is about ready to begin piping. The new improvements consist of head race, flumes, bridge flumes across the Illinois River, extension of ditches, new penstocks and a large trestle across the main outlet race upon which the pipe-heads are syphoned across to the giant pipes.

Josephine County.

Davis.—This hydraulic mine on Jump-Off-Joe Creek is piping night and day. A. C. Howland is superintendent.

PENNSYLVANIA.

Wyoming and Pond Creek Coal Company.—At the recent annual meeting in White Haven the following officers were elected: M. A. Cushman, of New York, president; M. G. Lathrop, of White Haven, secretary and treasurer; David McFarlane, of White Haven, superintendent, with Messrs. Cushman, Page, Lutz, Lathrop and C. R. Bachman, from New York and Allentown respectively, directors. The most important feature of the meeting was taking under consideration the negotiations communicated by coal carrying companies with the Pond Creek Coal Company for the purchase of its plant.

Anthracite Coal.

Cayuga.—An explosion of gas followed by an explosion of dynamite in a remote part of this mine at Scranton, owned by the Delaware, Lackawanna & Western Coal Company, resulted in the death of 2 men and slight injuries to 2 others.

Lehigh Valley Coal Company.—This company's statement for December, the first month of its fiscal year, is as follows:

	1899.	1900.
Earnings	$1,826,067	$2,025,286
Expenses and taxes	1,809,858	2,062,330
Net or deficit	N. $16,209	D. $37,044

This shows for December, 1900, an increase of $199,219, or 10.9%, in earnings, and an increase of $252,472, or 14.0%, in expenses.

Natalie Anthracite Company.—The breaker at this company's colliery at Shamokin was destroyed by fire recently and the colliery, which was leased by the Shamokin Coal Company, is idle. Over 1,000 men and boys were employed.

Seneca Coal Company.—The rock men employed at the Twin shaft and Coxey collieries of this company and the Old Forge mines at Pittston Junction and Duryea, recently bought by the Erie, are on strike. They have been receiving $1.65 and $2.09 per day and demand $2.20 and $2.47 per day.

The Twin shaft and Coxey are owned by the Seneca Coal Company, while the Old Forge is one of the recently acquired Erie properties.

Bituminous Coal.

The following men passed the examination for mine foreman held at Johnstown in January under the supervision of Mine Inspector J. T. Evans: George Robinson, John Rettallack, Thos. Mather, William Doubt and John Jones, Johnstown; William Marron, James Keenan, William H. Morgan and Charles Maher, Windber; Jas. Callahan and Peter Welsh, Ehrenfeld; John W. Harrison, South Fork; John Lloyd, John McCormick, Reynoldsville; William J. Benson and Charles Jones, Spangler; Thomas Pearce and James Appleyard, Portage; W. J. Eustis, Hostetter, Westmoreland County; John Brown, Hooversville; John J. Godfrey, Amsbry.

(From Our Special Correspondent.)

The Pennsylvania Railroad has announced that the Pittsburg, Virginia & Charleston extension is to be put through. This will open up some of the finest coal land in Western Pennsylvania.

Clinton Land Company.—This Pittsburg company has bought from J. V. Thompson and others of Uniontown 2,000 acres of coal land in Redstone Township for $700,000. The company will at once develop the tract.

Clyde Coal Company.—This company has awarded the contract to the American Bridge Company for a large steel tipple for its mine on the Monongahela River at Fredericktown, Pa. It will be the largest and most complete tipple on the river. It will be equipped with two sets of screens and chutes and will have a capacity of 3,000 tons of coal daily. It will be equipped with automatic cross-over dumps and the empty cars will be returned to the mine automatically, after dumping, by means of chain hauls, thus reducing the cost of screening and loading the coal to a minimum. The tipple will be supported on solid stone piers, instead of on wooden bents as is usually the case. The tipple will be built from designs made by Wm. Glyde Wilkins, civil engineer, Pittsburg.

Dr. J. W. Ely and E. H. Steinman, of Washington, Pa., have sold 2,500 acres of coal land in West Bethlehem Township. The consideration is not known, but farmers were paid $100 an acre for the tract. An Eastern syndicate bought it.

H. C. Frick Coke Company.—A new air shaft has been completed at the Leith works of this company. A fine fan house and fan will be erected.

Hebb Coke Drawer Company.—This company proposes to make a machine for drawing coke, from bee-hive ovens. The inventor is John Hebb, a coal miner of Uniontown. Among the incorporators are E. D. Fulton, John Todd, Jacob Davis, W. W. Parshall, John McFadden and W. H. Hopgood. The company is capitalized at $15,000. A plant to manufacture the machines will be erected.

J. V. Thompson, D. M. Hertzog, A. F. Cooper, Thomas S. Lackey, of Uniontown, and William H. Binns, of California, recently bought a tract of 11,000 acres of the Pittsburg vein of coal in Green County.

L. C. Haler, of McKeesport, and George Guffey, of West Newton, recently closed a deal with F. S. and W. G. Gleason, of McKeesport, by which options on about 600 acres of coal land along the Youghiogheny River, in Versailles Township, were secured. Haler and Guffey will sink shafts at once.

SOUTH CAROLINA.

Phosphate Industry.—Mr. Samuel W. Vance, the phosphate commissioner, in his report states that the State's revenue for 1900 is not so large as for 1899, as miners found it impossible to secure transportation for their rock at a reasonable freight rate. Profits on foreign shipments were very small, owing to high ocean freights. The freight was advanced from 12s. per ton in February, 1899, to 22s. in July, 1900, which makes an advance of about $2.50 per ton. Owing to the large amount of rock on hand the Beaufort Phosphate Company suspended work October 31st, the Empire Company September 30th and the Coosaw Company reduced its force one-half on September 8th. There were mined in the fiscal year ended December 31st, 1900, a total of 121,225 tons of rock, against 121,073 tons in 1899, and the shipments were 72,209 tons, against 134,094 tons last year. Of the shipments 39,435 tons went abroad, against 94,921 tons in 1899, and 32,774 were sent to domestic consumers, against 39,173 tons in 1899. Stocks on hand on December 31st, 1900, were 67,637 tons, as against 18,539 tons on January 1st, 1900. The royalty due the State on the rock mined in 1900 is $21,566, as against $34,929 in 1899; a decrease in royalty of $13,362, of which the following is a detailed statement: Coosaw Company on shipment of 14,388 tons, $6,351; Empire, 5,485 tons, $1,371; Central, 26,347 tons, $6,587; Beaufort, 17,642 tons, $5,184; Stono, 8,297 tons, $2,074; total shipments, 72,209 tons, and royalty, $21,566. The royalty received by the State from 1870 to 1900 inclusive amounted to $3,242,969.

SOUTH DAKOTA.

Custer County.

(From Our Special Correspondent.)

Chicago Mica Company.—M. A. Schneider, president, has been in Custer from Valparaiso, Ind., to look over the company's properties, of which F. C. Graydon, of Chicago, is superintendent. A carload of mica was shipped this week to the company's works at Valparaiso, from its Crown Mine. Some large books of mica are reported found on the Daly Mine, 3 miles north of Custer, said to be the largest ever found in the Black Hills. One book measured 20 by 23 in. thick and weighed 80 lbs. It was valued by the company at $8 per pound. The company is shipping 2 to 4 car-loads per month.

Crown Hill Company.—Preparations are being made to enlarge the 50-ton concentrating plant at the Spokane Mine. The capitalization of the company has been doubled.

Mayflower.—The shaft is down 126 ft.

New York.—This mica mine, 9 miles west of Custer, owned by C. A. Dow, of Sioux City, Ia., will ship a car-load of mica to New York City this week for the Sill-Eddy Mica Company, of that city. Recob & Company, of Chicago, have started work on an old mica mine 2 miles east of Custer and will make a shipment this month. The prices paid for mica in Custer are: Waste or old dump mica, $25 to $35 per ton; electrical mica, shear trimmed, 80c. to $10 per pound; run of mine, $60 to $90 per ton.

Salmon.—This claim has been bonded to C. H. Crabtree, of Des Moines, Ia.

Lawrence County.

(From Our Special Correspondent.)

Dakota Company.—A site has been purchased for the new cyanide plant in Deadwood and work on the foundation will start this month.

Denver-Colorado Company.—This company has been organized to work the Cora Mine and Davis Mill in Bear Butte District. The officers are: President, S. R. Thompson, Boulder, Colo.; vice-president, A. R. Olson, Deadwood, S. D.; secretary and treasurer, L. E. Thompson, Boulder. The company is capitalized at $250,000. The ore carries gold, silver and lead.

Niagara Tin Smelting Company.—This company has recently been organized, ostensibly to develop 80 acres of ground in the Bear Gulch District, formerly owned by A. J. Johnston, of Spearfish. The company proposes to erect a 150-ton concentrating plant, and ship the product to an electric smelting works at Niagaara Falls. The officers and directors are nearly all residents of New York.

Trent Company.—A streak of horn silver is reported found in this old mine in Carbonate District. A reorganization has been made, with 250,000 shares of stock, par value $5.

Pennington County.

(From Our Special Correspondent.)

Joe Dollar.—Eastern parties have become interested in this mine, east of the Golden Slipper, near Hill City. George A. Carr, of Deadwood, promoted the deal. The company has purchased a whim and a Tremain mill will be erected.

TEXAS.

Robertson County.

Brazos Valley Coal, Clay and Manufacturing Company.—This company, capital stock $50,000, was recently organized. The following citizens of Calvert were elected officers: John H. Dorman, president; L. H. Parrish, vice-president; John T. Garrett, treasurer; S. W. Parrish, secretary; L. P. Fuller, superintendent and general manager. The following gentlemen compose the directory: L. H. Parrish, John H. Dorman, John T. Garrett, S. W. Parrish, L. T. Fuller, of Calvert; G. H. Turner, Palestine; and E. J. Fay, Marshall. The company have a lease from Mrs. P. J. Gunell for about 1,800 acres of coal land, and they propose to start sinking shaft and purchasing all necessary running machinery to work in a seam of lignite. The mine is located on the Calvert, Waco & Brazos Valley road, about 4 miles west of Calvert.

UTAH.

Juab County.

(From Our Special Correspondent.)

Bingham Copper and Gold.—On January 31st the new smelter started to the entire satisfaction of the management. The new plant is at Bingham Junction, midway between Salt Lake City and the company's mines. The ore used was from the Tesora and the Grand Central, with some slag from the old dump at Stockton, carrying good values.

Salt Lake County.

(From Our Special Correspondent.)

Nebo Salt and Manufacturing Company.—The Inland Crystal Salt Company, the Utah salt trust, has secured control of this company's property; the price was $30,000. The Nebo company owned salt springs 6 miles from Nephi and made dairy salt. It was the sole remaining rival of any consequence the trust had.

WASHINGTON.

Ferry County—Republic.

(From Our Special Correspondent.)

Ajax.—This claim, 4 miles south of Republic, has a shaft down 50 ft. A drift is in 12 ft., a large exposure of quartz cropping. On the 50-ft. level the quartz is 7 ft. wide, and good values are reported.

Ben Hur.—Water is being drawn out preparatory to stoping.

Black Tail.—Only 2 men are employed prospecting until the ore can be shipped to custom mill.

Bodie.—The tunnel in this claim at Bodie has cut the vein 26 ft. in width, carrying a rich ore

shoot, and a drift on the contract is to run 100 ft.

Butte & Boston.—At 75 ft. south of the crosscut, on the 300-ft. level, a crosscut driven east 25 ft., is reported to intersect 5 ft. of good-looking quartz, but no values are reported.

California.—The steam hoist is being put in. A car-load shipment to the smelter at Grand Forks netted $43 per ton. The freight was $12 and smelter charges $6 per ton. Ore ran in gold, silver and copper.

Chico.—The north drift on 300-ft. level is in 73 ft.; the breast in the foot-wall rock with about a foot of the vein. Samples are said to run from $70 to $100 per ton. As soon as the compressor is fitted up machine drills will take the place of hand work.

Elk.—The tunnel has cut the vein 7 ft. without striking the hanging-wall. Assays are said to run from $39 to $62 per ton, principally gold.

Eureka Power and Cyaniding Company.—The mill is expected to be ready for custom ore by March 10th.

Flag Hill.—The northeast drift is in 100 ft.; the quartz averages about 4 ft. wide and carries good milling value.

Gold Ledge Consolidated Mining Company.—John A. Finch, of Spokane, Wash., becomes vice-president of this company. A tunnel started for the vein will go 1,350 ft. to get under the present lowest workings. The main shaft is down 130 ft., and the tunnel would come under it 321 ft. deeper. It is to strike the vein at 675 ft. in and follow it the balance of the distance. A contract for 400 ft. is let to Spokane people, who have brought in machinery and started work.

Great Columbia.—A tunnel, in about 160 ft., has intersected an 8-ft. quartz vein at a depth of 150 ft. No statement of values from the tunnel is given. The claim belongs to a West Virginia Company.

Morning Glory.—Another 20-ton shipment to the smelter is ready. The average value is reported at about $450 per ton.

Mountain Lion.—The shaft is down 208 ft. below adit level and sinking will continue until spring.

Number One Consolidated.—This claim has been closed for several months. A strong quartz vein was cut. Work is to be resumed and a tunnel in 150 ft. is to go 100 ft. further.

Princess Maud.—Drifting continues north and south on the vein at 300 ft. below the adit level. The superintendent reports the average values close to $10 per ton.

Quilp.—Stoping good ore continues on the No. 3 level. Shipping is slow, for want of sufficient teams. The southeast crosscut on the 100-ft. level is in good ore.

Republic Power and Cyaniding Company.—D. C. Jackling reports about 50 cyanide tanks have been cleaned up. It is reported that the average extraction is 91½%. Two new Griffin mills have been installed and the bases for 2 more are also in place.

San Poil.—Drifting on the No. 2 tunnel level continues, with only 2 men.

Tenderfoot & Trail.—A contract has been let to drive 30 ft. on the vein, on the tunnel level. Two men have started on the work.

Trade Dollar.—The manager has gone to Spokane to buy machinery for sinking 300 ft., consisting of steam boiler, hoist and pump. The vein has been prospected by open cutting and a tunnel. The control finally passed into the hands of British Columbian men, who will start a shaft. The Trade Dollar is on the San Poil vein.

WEST VIRGINIA.

Century Coal Company.—This company held its annual meeting in Baltimore last month. President John K. Shaw stated that the company would be ready to ship coal in a short time. The company's property, which includes 10,000 acres of coal lands, is located in Barbour and Upshur counties. Two shafts have been sunk and the capacity at the start will be 2,500 tons a day. A 10-mile railroad being built by the company from Philippi connects the property with the Baltimore & Ohio Railroad. The following directors have been elected: Alexander Shaw, Michael Jenkins, Gen. John Gill, Nelson Perin, Simon Rosenberg, John K. Shaw and H. F. Hanson. Mr. John K. Shaw was re-elected president and Mr. E. D. Hoffman secretary and treasurer.

Mason County.

Houston Coal and Coke Company.—S. A. Crozier, of Upland, has sold his ½ interest in this company at Elkton to C. B., H. H., and T. E. Houston. The board of directors was recently reorganized and the representatives of the Crozier interest were replaced by J. Frank Black and M. A. Houston.

FOREIGN MINING NEWS.

MEXICO.

Oaxaca.

La Leona.—This group of mines was transferred to the Leona Gold and Silver Mining Company, Limited, of London in Mexico City on February 1st. by the payment of $50,000 to Alfred Oest, of Oaxaca. The mines, comprising 48 pertenencias, were acquired by the company about 2 years ago under a conditional contract of sale, through Messrs. Heckelmann & McCann, under which the English company, organized by Richard W. Starkey in London, obligated itself, among other things, to erect within 2 years a 20-stamp mill and concentrating plant at Tlacolula, about 60 miles south of Oaxaca, where the mines are located, for the low-grade ores. This mill will be ready to start in a few days. It was erected by Jeo Elian and is pronounced one of the most substantial plants in Mexico. During the 2 years that Mr. Oest worked the mines he sold over $300,000 worth of ore to buyers at Oaxaca, averaging $300 per ton for the gold and silver contents, and shipped several car-load lots, assaying 1,500 oz. silver and 6 oz. gold per ton, netting $20,000 per car.

The English company aims to utilize the low-grade ores by concentration. The former owner could not ship these to a profit on account of high freight rates and treatment charges. The company has found several bodies of high-grade shipping ores, which are being sold in Oaxaca.

Through this deal Messrs. Heckelmann & McCann have become proprietors of the ore testing and sampling works at Nonoalco, City of Mexico, Mr. Oest having transferred his interest in this plant, representing an investment of $25,000, to them for having brought about the sale of the mines.

SOUTH AMERICA.

Chile.

Rosario Nitrate Company, Limited.—In the year ended September 30th, 1900, the gross profits were £110,336 ($551,680). Redemption of debentures will absorb £58,640 ($293,200), and debenture interest and general charges require £35,801 ($179,005), leaving a net balance after the inclusion of £6,964 ($34,820) brought forward of £22,872 ($114,360), which is undivided. The directors are hopeful of arranging with holders of the 5% debentures for an extension of the term for the final redemption of these debentures from April, 1904, to April, 1901.

COAL TRADE REVIEW.

New York. Feb. 8.

Anthracite.

Cold weather and high winds have strengthened the demand for anthracite decidedly. There is still a surplus of broken and egg sizes, but stove, chestnut and the steam sizes are wanted and orders are coming in from a wide stretch of territory. A cold wave in February gives the coal dealer more joy than one early in the winter, for it means that many consumers have to lay in fresh supplies at once. Both producers and dealers realize that for the rest of this winter the demand for anthracite coal must depend on the weather, but the present cold spell has kept the market from sinking into dullness. The outlook for several weeks at least is exceilent.

In the West buyers at Minneapolis and St. Paul are relying on all-rail shipments. Buying at Chicago has improved; the amount of coal coming in by rail is said to be ample. Along the lower lakes and at inland points East demand is brisk. The small sizes are much wanted. Along the seaboard consumers who have been going along in a hand-to-mouth way have sent in a rush of orders, but the weather has not seriously hampered the movement from the collieries, and, while prices are firm, we hear of no premiums for spot coal. Late last week arrivals at Boston were heavy and the supplies there are good. Coastwise traffic, however, is now light, and the coal that arrived will probably be wanted before more coal gets around Cape Cod.

We continue to quote for free burning white ash, f. o. b. New York Harbor ports: Broken, $3.75; egg, $4.25; stove and egg, $4.50.

Bituminous.

The Atlantic seaboard soft coal trade remains dull and quiet. Transient business is light and just at present consumers buying on contracts are well supplied. As a result there is a surplus of coal on the market. A lot has accumulated at the tidewater shipping ports waiting for the arrival of storm-bound vessels and in consequence the mines are curtailing their output materially. The main-line roads are forcing the movement of the coal now at tidewater by demurrage charges, and these forced sales result in low prices. It is said that coal is selling at New York Harbor ports for less than $2.15 per ton f. o. b. Coastwise transportation is greatly impeded by high winds and ice; in fact, the actual coastwise movement this week has been very light.

There is a lot of coal at points beyond Cape Cod. On one day last week 43 barges and 1 schooner arrived at Boston. This proportion of barges to schooners is significant and shows one reason for the low coastwise freight rates. Along Long Island Sound demand is slack, even for the better grades. There is some activity at New York Harbor, but the supply more than equals the demand. All-rail trade holds up pretty well and is taking a fair tonnage.

Transportation from mines to tide is extremely good. Coal is coming through that has been sidetracked for weeks. Car supply is still embargoed to some shippers on account of delay in unloading cars at tidewater. In the coastwise vessel market vessels are scarce at the loading ports. Ice affects the movement of vessels. The Delaware is practically closed, being kept open by ice breakers, and coastwise freights have risen 5c. in consequence. We quote from Philadelphia as follows: Providence, New Bedford and the Sound, 70c.; Boston, Salem and Portland, 80c.; Portsmouth, 85c.; Newburyport, 95c.@$1.05; Lynn and Wareham, 90c.; with 10c. higher from the further lower ports.

Birmingham, Ala. Feb. 4.

(From Our Special Correspondent.)

The coal situation in Alabama shows no change, unless activity has increased. Quotations have been lively, advances amounting to more than 50c. per ton being made in the retail markets during the past 4 months. The Walker County operators have finally completed arrangements for their product to go down the Mississippi River and a larger amount will take that course this year than during 1900. Contracts made last summer have expired and the new contracts are in effect.

Col. T. H. Aldrich has lands near Bessemer and will develop them. There are a number of prospecting parties out seeking coal property to be developed.

There are no labor troubles in the mining districts and officials of the labor organization announce that matters are moving along nicely.

There is an exceptionally brisk demand for coke in this State and some heavy purchases have been made in other States. There are probabilities that several hundred coke ovens will be constructed during this year, especially in Walker County along the Ensley Southern Railroad from Ensley to Parrish, Ala.

Chicago. Feb. 5.

(From Our Special Correspondent.)

Anthracite coal has had a little boom because of colder weather, the buying having been more frequent and in quantities rather larger. Prices remain firm at $5.75@$6, no sign of any reduction being in sight. There continues a shortage in chestnut coal. Hard coal has suffered very much from the use of soft coal hereabouts.

Bituminous coal has improved but little, the colder weather not as yet having had any effect on the selling. Stocks are large and in consequence prices are sagging. Prices as asked nowadays are ones to make sales just to lighten stock and profit is very small indeed.

Cleveland, O. Feb. 6.

(From Our Special Correspondent.)

Two conditions this week have stimulated the coal market considerably. One is the continued prevalence of cold weather and the other is a possible disagreement between the miners and the operators as to the wage scale. The cold weather set in some days ago and has caused a great increase in the amount of business done. The demand has stiffened prices, but has resulted in no change as yet. The dealers are preparing against the time when coal will be scarce if a strike comes and wish to avoid any advance in prices and still to take advantage of it by laying in more than the immediate demands of the market amount to. The sales therefore have been heavy. There is some discussion now of the probable lake contract rate for next season and the general belief seems to be that it will approximate 40c. This is about in keeping with the proposed rate for carrying iron ore.

Pittsburg. Feb. 6.

(From Our Special Correspondent.)

Coal.—The mines of this district continue in full operation, but there is still complaint of a scarcity of cars. Nothing definite is yet known as to the probable outcome of the scale conference being held at Columbus, O. Reports from that place to-day are to the effect that both sides are standing out for their original demands. Neither side, however, seems to fear a disagreement which would mean a strike on April 1st.

Connellsville Coke.—The production of coke in the Connellsville Region last week passed the 200,000 ton mark, 335 more ovens having been put on the active list. The leading producer continues to quote furnace coke at $1.75 and foundry at $2.35 a ton. The same wages are being paid the coke workers as when coke was selling at $3 a ton. This gave rise to a report that a reduction was contemplated, but the re-

port is officially denied. Of the 20,997 ovens in The production last week was 201,167 tons, a gain over the previous week of 2,793 tons. The shipments for the week aggregated 10,138 cars, distributed as follows: To Pittsburg and river tipples, 3,647 cars; to points west of Pittsburg, 4,085 cars; to points east of Connellsville, 2,406 cars. This was an increase of 758 cars.

Foreign Coal Markets.

No important export contracts are noted here. Charters are somewhat easier, with light current demand. It is reported that some negotiations are pending for coal for Russian railroads.

The syndicate difficulties in Germany are gradually being settled. In France a disposition to contract for supplies for household purposes is manifested.

Messrs. Hull, Blyth & Co., of London and Cardiff, report under date of January 26th that pressing orders having been executed, a slight reaction has set in, prices showing small declines all round. Quotations are: Best Welsh steam, $4.56@$4.80; seconds, $4.32@$4.44; thirds, $4.20; dry coals, $3.84@$4.08; best Monmouthshire semi-bituminous, $4.20@$4.32; seconds, $3.96 @$4.08; best small steam coal, $1.92@$2.04; seconds, $1.80; other sorts, $1.56.

These prices for Cardiff coals are all f. o. b. Cardiff, Penarth and Barry, while those for Monmouthshire coals are all f. o. b. Newport, exclusive of wharfage, and are for cash in 30 days, less 2½% discount.

Tonnage is plentiful and rates, except for South American ports, have fallen. Some rates are: Cardiff to Marseilles, $1.55 per ton; Genoa, $1.86; Naples, $1.92; Port Said, $2.16; Singapore, $3.96; St. Vincent, $1.80; Buenos Aires, $2.88@$3; Rio Janeiro, $3.36.

SLATE TRADE REVIEW.

New York. Feb. 8.

The list of prices per square for No. 1 slate standard brand f. o. b. at quarries in car-load lots, is given below:

Size, Inches	Monson or Br'nville.	Bangor.	Bangor Ribbon.	Alb'n, or Jackson Bangor.	Chap'n Keys'ne	Peach Bottom.	Sea Gr'n.	Unfad'g Green.	Red.
	$	$	$	$	$	$	$	$	$
24 x 14	6.50	3.50	3.00	3.00	.	5.10	3.00	..	.....
24 x 12	6.60	3.50	3.00	3.00	3.80	5.25	3.00	3.75	.....
22 x 12	6.60	3.50	3.25	3.00	... .	5.25	3.00	3.75	.....
22 x 11	6.50	3.75	3.25	3.00	4.00	5.25	3.00	4.00	.....
20 x 12	6 90	3.75	.....	3 00	.....	5.25	3.00	3.75	.....
20 x 11	6.80	.....	.....	3.25	....	5.25	3.00	.....	.. ....
20 x 10	6.80	4.25	3.50	3.25	4.00	5.35	3.00	4.25	10.50
18 x 12	6.80	3.75	.....	3.00	.....	5.25	3.00	3.50	.....
18 x 11	7.00	.....	.....	.....	.....	...	3.00	3.75	.....
18 x 10	7.00	4.25	3.50	3.25	4.00	5.35	3.00	4.00	10.50
18 x 9	7.00	4.50	3.50	3.25	4.00	5.35	3.00	4.25	10.50
16 x 12	6.80	3.75	....	3.00	.....	.....	2.90	3.50	....
16 x 10	7.00	4.00	3.50	3.25	4.00	5 25	2.90	4.00	10.50
16 x 9	7.00	4.25	.....	3.25	4 00	5.35	2.90	4.25	10.50
16 x 8	7.00	4.50	3.50	3.25	4.25	5.35	2.90	4.25	10.50
14 x 10	6 60	3.75	3.25	3.00	.....	5 25	2.70	3.75	10.50
14 x 9	6.50	.....	.....	.....	.....	.....	2.70	3.75	10.50
14 x 8	6 60	3.75	3.25	3.00	4.00	5.10	2.70	4.25	10.50
14 x 7	6.40	3.75	3.25	3.00	3.75	5.10	2.50	4.25	10.50
12 x 10	5.75	....	.. .	....	.. .	...	2.50	3.25	....
12 x 9	5.60	.....	.....	.....	....	.....	2.50	3.25	.....
12 x 8	5.50	3.50	.....	2.85	.....	4 85	2.50	3.50	9.00
12 x 7	5.00	3.25	.....	2.85	3 25	4.85	2.00	3.50	9 00
12 x 6	4.80	3 25	.....	2.85	3.25	4.75	2.00	3 50	8.50

A square of slate is 100 sq ft. as laid on the roof

Frosty weather has interfered with work at the quarries, but as orders are only moderate market conditions are little affected. Prices are fair, considering the amount of competition.

Exporters report a better outlook for business. Recently 45 car-loads of roofing slate, valued at $16,000, were shipped to Cork, Ireland, from New York. Usually exports of this kind are made from Philadelphia or Baltimore, in order to save the extra charge for lighterage on steamer which is made at New York.

IRON MARKET REVIEW.

New York, Feb. 8, 1901.

Pig Iron Production and Furnaces in Blast.

Fuel used	Week ending Feb. 9, 1900. F'ces.	Tons.	Feb. 8, 1901. F'ces.	Tons.	From Jan., '00. Tons.	From Jan., '01. Tons.
An' racite & Coke.	264	291,825	201	244,150	1,652,068	1,360,266
Charcoal.	32	8,125	32	7,225	45,542	40,253
Totals..	296	299,950	233	251,375	1,697,610	1,400,519

The great topic of discussion this week is what appears to be the final withdrawal of Mr. Carnegie from the field and the acquirement of his great properties by Mr. Morgan and others. What shape the consolidation of the trade will take, what effect it will have on the future, are points on which all sorts of opinions are aired. A very general feeling seems to be one of regret, and some conservative men feel that it is time for them to get out of the trade, which will be under the control of Morgan, Rockefeller and their associates. It is too soon to comment intelligently, but the news cannot be considered as good.

Birmingham, Ala. Feb. 4.

(From Our Special Correspondent.)

There were two or three good sales made during the past week and inquiries are keeping up well. The demand is greater than the production and orders are taken for future delivery. The statement that some furnaces are sold up 3 months ahead is reiterated.

While there were no extra-large orders coming in daily, the general condition seemed to be firm and steady and quotations remain stationary. Nothing is heard of concessions on quotations and No. 2 foundry is quoted yet at $11 and $11.50 per ton.

There is a good demand for finished iron and steel, and as a consequence much work is being done in the mills. The mills at Bessemer, belonging to the Tennessee Coal, Iron and Railroad Company, are working hard, the plate mills in particular. The mills in Birmingham and Gate City, the property of the Republic Iron and Steel Company, are working hard also.

The production of pig keeps up well. The Gadsden furnace is not yet in blast. The Sloss-Sheffield Company has postponed blowing in one of its Sheffield furnaces.

The following quotations are given: No. 1 foundry, $11.50@$12.50; No. 2 foundry, $11@$11.50; No. 3 foundry, $10@$10.50; No. 4 foundry, $10; gray forge, $9.75@$10; No. 1 soft, $11.50@$12.50; No. 2 soft, $11@$11.25.

The Sloss-Sheffield Steel and Iron Company has closed a deal for a large supply of coke from West Virginia. The statement is made that with a mixture of Alabama coke a better material pig iron is obtained, hence the purchase of a good supply of coke.

It is said that since the steel plant at Ensley, the property of the Tennessee Coal, Iron and Railroad Company, has been in operation more than 12,500 tons of steel, in billet and other form, have been exported, the greater portion of it going to Glasgow and London, through New Orleans.

Buffalo. Feb. 6.

(Special Report of Rogers, Brown & Co.)

The market has the peculiarity that the larger buyers are quietly and with deliberation placing orders for blocks of from 1,000 to 5,000 tons each, while the majority of consumers are hesitating or purposely holding aloof. The result is that while a fair business is doing the total tonnage is below the average. The competition engendered by these larger sales has brought out a range of prices on Northern-made iron about 50c. below recent quotations, so we revise our figures accordingly, and quote as below on the cash basis, f. o. b. cars Buffalo: No. 1 strong foundry coke iron, Lake Superior ore, $14.50; No. 2, $14; Southern soft, No. 1, $15.25; No. 2, $15; Lake Superior charcoal, $17; coke malleable, $14.

Chicago. Feb. 5.

(From Our Special Correspondent.)

Pig Iron.—The market has again assumed a quiet aspect, sales being few and mostly for small lots. Prices appear well maintained and with few exceptions the market is quite strong. Consumers are taking iron on contracts as fast as delivery can be made. Quotations are as follows: Lake Superior charcoal, $18.50@$19; local coke foundry, No. 1, $15@$15.50; No. 2, $14.50@$15; No. 3, $14@$14.50; local Scotch, No. 1, $15@$15.50; Ohio strong softeners, No. 1, $16@$16.25; Southern silvery, according to silicon, $15.50@$16; Southern coke, No. 1, $14.85@$15.35; No. 2, $14.35@$14.85; No. 3, $13.85@$14.35; Southern No. 1, soft, $14.85@ $15.35; No. 2, soft, $14.35@$14.85; Standard Bessemer, $15@$15.50; malleable Bessemer, $15@ $15.50; Alabama Car Wheel, $20@$21.

Cleveland, O. Feb. 6.

(From Our Special Correspondent.)

Iron Ore.—Matters are still in an unsettled and an unsatisfactory state. No effort has as yet been made to fix prices, the preliminary meetings not having been held. It is said that questions of differentials between the old range and the Mesabi ores are bothersome and must be decided before the prices may be made. The talk of season contract rates for lake transportation is being heard now, but nothing definite is developing. All discussion tends toward 80c. as a possible rate.

Pig Iron.—The market this week has been quiet. Sales have been light, with no great amount of tonnage going. Foundry irons have held firm at the old prices—$14 for No. 1 and $13.50 for No. 2 at the furnace. The chances for prompt deliveries are excellent, the furnacemen promising almost immediate deliveries. The sales of basic have been slow, owing largely to the fact that the furnacemen have none to offer for the present. Basic is quoted at $13.50, Valley furnace, with off-basic at $12. Bessemer stands at $13, that being the very top figure, but the sales have been very few.

Finished Material.—The business in structural steel continues the heaviest part of the market. Inquiries were made this week for 20,000 tons in one lot and it is expected that the order will be placed in a day or so. The prices have not changed in the least, 1.50 on beams and channels and 1.40 on angles being generally paid. Most of the structural shapes now are for work on bridges. The price of bars is easing off. All mills have quoted this week 1.25 on bars, which is a slight reduction for some mills, the incentive being a large order which will be placed soon. Plates are holding firm at 1.40, Pittsburg. Billets are in fair demand at $19.75.

Old Irons.—The purchases this week have been at lower prices than the dealers have paid for weeks and buyers have been demanding a commensurate reduction. The business this week has been heavier than at any time since the holidays. The prices temporarily remain as they were quoted last week: Heavy steel, $13.50; wrought turnings, $9; cast iron borings, $5.75; old car wheels, $17.50; cast scrap, $13; No. 1 wrought, $15.

Philadelphia, Pa. Feb. 7.

(From Our Special Correspondent.)

Pig Iron.—Our agents and brokers contradict the rumors that there have been large transactions in pig iron and reassert their conviction that there exists no good reason for any material change in the situation. The belief, however, exists that there will be concessions before there will be large dealings. At present quotations are given at $16@$16.50 for No. 1 X foundry; $15.50@$16 for No. 2 X, and $14.75@ $15.25 for No. 2 plain. Standard gray forge is $14.50; ordinary, $14; basic, $14.

Billets.—Bessemer is $21; open-hearth, $22. Large transactions will be closed as soon as ore quotations are definitely fixed.

Merchant Bars.—The statement is made that some interior mills are shading bar iron prices and one authority asserts that 1.40c. is now the price for refined. Steel bars are quoted 1.40@ 1.50c. and a moderate business only is being done.

Sheets.—Several orders for common sheet iron on a basis said to be more favorable to buyers have been booked.

Pipes and Tubes.—The oil-field requirements are bringing about a prosperity which promises to keep prices firm. Tubes are in good demand at all points where large buying is done.

Skelp.—The skelp mills are doing good work and say they have not been taking business at a reduction.

Merchant Steel.—This market is a reflection of outside conditions largely. Our agents agree that the winter consumption of steel has kept up to the average. Tool and tire steel, open-hearth spring steel and some other kinds keep at top prices.

Plates.—Representatives of our large consuming interests are doubtful as to the permanency of present quotations after April, but the policy is continued of covering all new work received at current prices. Quarter-inch plates are 1.50@1.60; universals, 1.55c.; flange, 1.65@1.70c. The mills in the central section have a good deal of work booked.

Structural Material.—The small buyers will be coming along for lots ranging from 50 tons upward. Those who speak for the bridge builders say that current orders are insignificant, but that enough business is in sight to satisfy everybody. Angles are continued at 1.65c. and beams at 1.70c.

Steel Rails.—Officials decline to give actual views or make positive statements. A few small lots were agreed to be rolled quickly to accommodate exporters, but orders cannot usually be accepted for quick delivery.

Scrap.—There is more scrap wanted. Everything brings a good price. Agents are out after odd supplies. The stuff picked up among Southern ports is also going fast. Heavy steel scrap will soon be bringing $16; steel axles would go at $17.50, and iron anywhere from $20@$21.50. Choice railroad scrap sold this week at $19, an outside figure.

Pittsburg. Feb. 6.

(From Our Special Correspondent.)

The iron and steel markets this week show continued improvement and indications point to advances in some lines of raw and finished material. Meetings of the leading steel interests are scheduled to be held in New York during the next few days to consider conditions and in all probability advance prices. President C. M. Schwab, of the Carnegie Company, left on Tuesday night for New York and representatives of Jones & Laughlins and the American Steel and Wire Company will go to-night. It is reliably reported that at the meeting of the steel rail pool the price of rails will be increased, probably to $28 a ton. It is said that over 1,000,000 tons have been contracted for by the railroads at the $26 price fixed last fall. The steel billet

pool will, it is believed, advance the price fully $1 a ton, making the price $20.75, Pittsburg. This is indicated by the refusal of makers to sell this week at the pool price, all sales having been made at 50c. a ton above the rate of $19.75. The plate pool is also slated for a meeting, but it is not anticipated that any advance in prices will be made, as the mills are sold up for months ahead at the latest price fixed. The beam pool, composed of makers of structural material, may readjust prices in anticipation of an increased spring trade. Prices of Bessemer pig iron are somewhat firmer this week and several thousand tons were sold for immedate delivery. The demand for foundry iron and gray forge continues good, but prices remain about the same as last week. A number of 200 and 300-ton lots of Bessemer steel billets were sold above the agreed price and there is a good demand. As indicated in last week's letter, there was no strike of blast furnacemen in the Valleys, a compromise having been reached on the wage dispute. As a result in addition to the improved conditions fires will be lighted this week at three of the Valley furnaces. They are the Hannah, of the Republic Iron and Steel Company; the Alice, of Pickands, Mather & Company, and the Clair, of the Clair Furnace Company. The two latter furnaces are in the Shenango Valley and the other is in the Mahoning Valley. The blast furnace of the Lorain Steel Company at Loraine, O., was put in operation this week. The entire plant of this concern is now in full operation.

Pig Iron.—Sales of Bessemer pig iron, aggregating about 5,000 tons, were sold this week at $12.75@$13, Valley Furnaces, equal to $13.50@$13.75, Pittsburg. This iron is for immediate shipment. About 2,000 tons of foundry No. 2 were sold at $14@$14.25 and 1,000 tons of gray forge at $13.25.

Steel.—There was quite a demand for Bessemer steel billets and 50c. above the pool price was obtained. About 2,000 tons were sold this week at $20.25, Pittsburg. There is a continued demand for steel bars and plates and the mills are crowded with orders, but prices remain unchanged.

Sheets.—The demand for sheets continues active, but no change has been made in prices. The American Sheet Steel Company has not started any of its idle mills that have been closed since last July, despite the increasing demand. A secret conference of representatives of the Amalgamated Association from all the union sheet mills in the country was held during the week for the purpose of devising plans for securing employment for the idle union sheet mill workers. The result of the deliberations was not made public, but it is believed the sheet combination will be urged to start some of its idle plants. No. 28 is still quoted at 2.95@3c. and galvanized sheets at 75% off, with no freight allowance.

Ferro-manganese.—There is no change in prices, the leading producer continuing to quote $62.50 for 80% domestic.

New York. Feb. 8.

The local iron market is firm in nearly all lines of finished products and demand shows improvement. In foreign trade we note shipments of $50,000 worth of manufactured iron, $9,000 worth of steel rails and $15,000 worth of machinery to Argentina, with good shipments of machine tools, machinery, etc., to European ports.

Pig Iron.—There is not much life to the market yet, and prices are rather weak. We quote for Northern iron tidewater delivery: No. 1 X foundry, $16.25@$17.25; No. 2 X, $15.50@$16; No. 2 plain, $14.75@$15.25; gray forge, $14.50@$14.75. For Southern irons on dock, New York, No. 1 foundry, $15.25@$15.75; No. 2, $14.50@$15; No. 3, $14.25@$14.50; No. 4, $13.50@$14; No. 1 soft, $15.25@$15.75; No. 2, $14.50@$15.

Bar Iron and Steel.—Trade shows improvement. We continue to quote common bars at 1.35c. for large lots on dock; refined bars, 1.45c.; soft steel bars, 1.40c.

Plates.—Officials of the companies in the pool have been in session in this city and higher prices are anticipated. Business is good. We quote for large lots at tidewater: Tank, ¼-in. and heavier, 1.65c.; flange, 1.75c.; marine, 1.85c.; firebox, 1.85c.; universal, 1.60c.

Steel Rails and Rail Fastenings.—Inquiries from abroad continue to come in, those from Japan and Australia are said to aggregate 12,000 tons. It is known that some mills have been selling under $20 for export. Standard sections are still quoted at $26 at Eastern mills; light rails at $26@$30, according to weight. Spikes are 1.55c.; splice bars, 1.40c.; bolts, 2.10@2.25c.

Structural Materials.—Demand is fair. Prices are firm. We continue to quote at tidewater: Beams, 1.65c.; channels, 1.65c.; angles, 1.30c.; tees, 1.70c.; zees, 1.65c.

Nails.—The advance in quotations is partly offset by the reductions in freight rates recently secured. We quote for large lots on dock: Wire nails, $2.55; cut nails, $2.15.

METAL MARKET.

New York. Feb. 8.

Gold and Silver.

Gold and Silver Exports and Imports
At all United States ports in December and year.

Metal.	December.		Year.	
	1899.	1900.	1899.	1900.
GOLD.				
Exports	$11,857,511	$410,533	$45,379,411	$54,134,623
Imports	5,620,246	3,375,552	51,334,964	66,738,025
Excess	I. $6,237,265	I. $2,965,019	I. $5,955,553	I. $12,603,402
SILVER.				
Exports	5,700,914	7,958,339	53,461,737	66,221,664
Imports	3,026,219	3,014,558	30,843,929	39,760,494
Excess	E. $2,674,695	E. $4,343,781	E. $22,617,808	E. $26,461,170

Gold and Silver Exports and Imports, New York
For the week ending Feburary 7th, 1901, and for years from January 1st, 1901, 1900, 1899 and 1898.

Period.	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	$6,000	$92,755	$562 499	$144,875	E. $330,869
1901..	8,879,690	332,257	3,845,804	502.777	E. 11,884,460
1900..	1,679,788	658,656	4,274,755	438,839	E. 4,857,048
1899..	363,831	2,822,077	3,733,813	357,881	E. 920,716
1898..	2,733,755	2,798,218	4,999,597	1,329,335	E. 3,605,799

The United States Assay Office in New York reports the total receipts of silver at 201,000 oz. for the week. This makes a total of 460,000 oz. from January 1st.

Average Prices of Silver per oz. Troy.

Month.	1901.		1900.		1899.	
	Lond'n Pence.	N. Y. Cents.	Lond'n Pence.	N. Y. Cents.	Lond'n Pence.	N. Y. Cents.
January...	28.97	63.12	27.30	59.30	27.42	59.36
February..	.....	.....	27.49	59 76	27.44	59.42
March.....	.....	.....	27.59	59.81	27.48	59.64
April.....	.....	.....	27.41	59.59	27.65	60.10
May.....	.....	.....	27.56	59.96	28.15	61.23
June.....	.....	.....	27.81	60.42	27.77	60.43
July.....	.....	.....	28.23	61.25	27.71	60 26
August....	.....	.....	28.13	61.14	27.62	60.00
September	.....	.....	28.85	62.63	27.15	58.89
October ..	.....	.....	29.58	63.83	26.70	57.98
November	.....	.....	29.66	64.04	27 02	58.67
December.	.....	.....	29.68	64.14	27.21	58.99
Year....	.....	.....	28.17	61.41	27.44	59.58

The New York prices are per fine ounce; the London quotation is per standard ounce, .925 fine.

Average Prices of Metals per lb., New York.

Month.	COPPER.		TIN.		LEAD.		SPELTER.	
	1901.	1900.	1901.	1900.	1901.	1900.	1901	1900.
Jan	16.25	15.58	26.51	27.07	4.35	4.68	4.13	4.65
Feb.....	.....	15.78	.....	30.58	.....	4.675	.....	4.64
March...	.....	16.29	.....	32.90	.....	4.675	.....	4.60
April....	.....	16.76	.....	30.90	.....	4.675	.....	4.71
May.....	.....	16.34	.....	29.37	.....	4.181	.....	4.53
June.....	.....	15.75	.....	30 50	.....	3.901	.....	4.29
July.....	.....	15.97	.....	33.10	.....	4.030	.....	4.28
August ..	.....	16.35	.....	31.28	.....	4.250	.....	4.17
Sept.....	.....	16.44	.....	29.42	.....	4.350	.....	4.11
October..	.....	16.37	.....	28.54	.....	4.350	.....	4.15
Nov.....	.....	16.40	.....	28.25	.....	4.350	.....	4.29
Dec	.....	16.31	.....	26.94	.....	4.350	.....	4.25
Year. ...	.....	16.19	.....	29.90	.....	4.37	.....	4.39

The prices given in the table for copper are the averages for electrolytic copper. The average price for Lake copper for the year 1900 was 16.52c.; for the month of January, 1901, it was 16.77c.

Prices of Foreign Coins.

	Bid.	Asked
Mexican dollars	$ .47½	$ .50
Peruvian soles and Chilean pesos	.43½	.46½
Victoria sovereigns	4.85	4.88
Twenty francs	3.84	3.88
Twenty marks	4.73	4.78
Spanish 25 pesetas	4 78	4.82

Financial Notes of the Week.

Business generally continues fair. The speculative markets have been active on reports of many great deals, which are referred to elsewhere. No gold exports are noted this week, and the movement to Europe has apparently ceased for the present.

The silver market has been somewhat erratic. After a rise to 28¼d. demand suddenly fell off and silver to-day could not be placed over 27⅞d. Indian requirements are reported to be large, but purchases are likely to be extended over a wide period.

Indian exchange has been weaker and Council bills sold in London at 16d. per rupee. There have been large shipments of gold to India, including £800,000 from London and £300,000 from Australia. Buying of silver on Indian account has been light.

The statement of the United States Treasury on Wednesday, February 6th, shows balances in excess of outstanding certificates as below, compared with the corresponding day last week:

	Jan. 30.	Feb. 6.	Changes.
Gold.....	$71,162,860	$70,175,097	D. $987,763
Silver.....	18,102,195	19,024,022	I. 921,827
Legal tenders.....	13,170,286	12,987,740	D. 182,546
Treas. notes, etc..	135,577	200,426	I. 64,849
Totals.....	$102,570,918	$102,387,285	D. $183,633

Treasury deposits with national banks amounted to $98,907,757, showing an increase of $1,122,793 as compared with the corresponding day last week.

Imports and Exports of Metals.

Port.	Week, Feb. 6.		Year 1901.	
	Expts.	Impts.	Expts	Impts.
New York.				
(N. Y. Metal Exchange.)				
Aluminum.....long tons	12	4	15	15
Antimony ore... " "	.....	25	.....	39
" regulus.. " "	19	.....	19	113
Chrome ore..... " "	.....	.....	.....	.....
Copper, fine..... " "	2,609	434	9,510	1,738
" matte.. " "	57	.....	252	22
" ore..... " "	.....	3,460	.....	6,310
" ash..... " "	.....	.....	.....	.....
Iron ore..... " "	.....	.....	.....	.....
" pig, bar, rod " "	578	.....	3,716	102
" pipe..... " "	994	.....	2,573	.....
" plates, sheets " "	12	.....	149	.....
Lead..... " "	1,345	2,340	8,803	6,845
" ore.. ..... " "	.....	.....	.....	.....
" dross..... " "	.....	.....	.....	.....
Manganese, ore. " "	.....	100	.....	1,110
Metals, old, scrap " "	129	60	402	196
" Composition... " "	364	.....	2,114	.....
Nails..... " "	161	.....	1,105	.....
Nickel ..... " "	64	.....	230	12
" ore, matte " "	.....	3,600	.....	3,600
Railr'd material. " "	815	50	5,250	255
Rails, old..... " "	.....	.....	.....	.....
Steel bars, plates " "	1,686	109	10,358	562
" rails..... " "	2,523	.....	7,591	.....
" wire..... " "	1,091	.....	4,125	.....
Tin..... " "	.....	675	.....	3,067
" and black plates" "	.....	61	.....	3,349
" dross..... " "	.....	.....	.....	.....
Zinc..... " "	1	.....	1	50
" dross..... " "	7	.....	123	.....
" ashes, skim " "	28	.....	54	.....
" ore..... " "	1,959	.....	1,959	.....
Baltimore.				
(Special Correspondence).				
Antimony.....long tons	.....	.....	.....	.....
Chrome ore..... " "	.....	.....	.....	.....
Copper, fine..... " "	265	131	2,277	753
Ferro-manganese " "	.....	.....	.....	.....
Iron pig, bar etc. " "	.....	.....	1,145	1,386
" ore..... " "	.....	.....	.....	24,126
" pyrites..... " "	.....	.....	.....	3,575
Manganese ore. " "	.....	.....	.....	3,250
Metals, old & Rails " "	.....	.....	.....	.....
Nails ..... " "	21	.....	97	.....
Pipe, iron & steel " "	70	.....	302	.....
Silicon ..... " "	.....	.....	.....	.....
Spiegeleisen..... " "	.....	.....	.....	.....
Steel, bars, etc.. " "	172	.....	5,411	67
" wire ..... " "	25	.....	534	14
" rails..... " "	4,286	.....	14,159	.....
Tin..... " "	.....	.....	.....	50
" and blackplates " "	.....	10	.....	97
Zinc..... " "	.....	.....	.....	.....
Philadelphia.				
(Week ending Feb. 2).				
Copper, fine.....long tons	.....	.....	.....	.....
Iron, pig..... " "	.....	.....	39	525
" ore..... " "	.....	.....	.....	18,190
Metals, old..... " "	.....	.....	11	.....
" composition " "	.....	.....	7	.....
Railroad material " "	.....	.....	21	.....
Steel, bars, etc. " "	2,237	.....	2,291	.....
" rails..... " "	.....	.....	202	.....
Tin..... " "	.....	15	.....	115
" and black plates" "	.....	.....	.....	2
Zinc..... " "	.....	.....	.....	.....
" ore..... " "	.....	.....	2,061	.....
" dross..... " "	10	.....	48	.....
" ash..... " "	.....	.....	6	.....

Total United States.

Articles.	Year, 1900.		Year, 1899.	
	Expts.	Impts.	Expts.	Impts.
Antimony.....long tons	11	1,622	8	1,411
" ore.... " "	.....	2,695	.....	1,778
Copper, in all forms..... " "	159,564	85,042	118,914	63,745
Iron, pig & bar.. " "	300,321	71,357	240,211	60,184
" ore..... " "	51,460	897,792	40,665	674,082
Iron & steel plates " "	55,015	5,143	56,980	7,044
Iron & steel rails " "	361,619	1,448	277,714	2,134
" " wire " "	78,041	1,848	116,337	2,363
Lead, in all forms " "	88,934	100,153	67,667	86,106
Manganese ore and oxide..... " "	3	256,252	25	188,349
Nickel " & matte " "	2,621	5,393	2,234	4,071
Nails, cut..... " "	11,163	.....	9,974	.....
" wire ..... " "	27,404	.....	33,517	.....
Quicksilver..... " "	347	.....	564	.....
Steel, billets, rods, etc..... " "	199,548	33,804	72,913	30,565
Tin..... " "	495	30 834	446	31,807
" & black plates " "	737	60,386	302	58,915
Zinc ..... " "	20,030	899	6,046	1,333
" ore ..... " "	37,555	.....	24,197	

Import Duties on Metals.

The duties on metals under the present tariff law are as follows: Antimony, metal or regulus, ¾c. a lb. Lead, 1½c. a lb. on lead in ores; 2½c. per lb. on pigs, bars, etc.; 2½c. on sheet, pipe and manufactured forms. Nickel, 6c. per lb. Quicksilver, 7c. per lb. Spelter or zinc, 1½c. per lb. on pigs and bars, 2c. on sheets, etc. Copper, tin and platinum are free of duty.

The Treasury Department's statement estimates the money in the United States on February 1st as below:

	Total Stock.	In Treasury.	In Circulation.
Gold coin (inc. bullion in Treas)...	$1,112,427,728	$221,183,644	$615,576,805
Gold Certificates.	.....	.....	275,657,279
Silver Dollars.....	507,422,877	15,368,065	63,457,812
Silver Certifi..	.....	.....	428,597,000
Subsid. Sil	88,485,517	6,501,826	81,979,691
Treas. Nts of 1890.	58,278,000	186,169	58,091,831
U. S. Notes.....	346,681,016	12,631,612	333,054,404
Currency Certifi..	.....	.....	995,000
Nat. Bank Notes.	346,821,871	13,461,480	333,360,391
Totals	$2,460,117,009	$269,336,796	$2,190,780,213

Population of the United States February 1st, 1901, estimated at 77,195,000; circulation per capita, $28.38. For redemption of outstanding certificates an exact equivalent in amount of the appropriate kinds of money is held in the Treasury, and is not included in the account of money held as assets of the Government. This statement of money held in the Treasury as assets of the Government does not include deposits of public moneys in National bank depositaries to the credit of the Treasurer of the United States, and amounting to $91,373,341. The amount of money in circulation shows an increase of $17,528,334 over January 1st, 1901; and an increase of $187,630,858 as compared with February 1st, 1900.

The statement of the New York banks—including the 66 banks represented in the Clearing House—for the week ending February 2d, gives the following totals, comparison being made with the corresponding week in 1900 and 1899:

	1899.	1900.	1901.
Loans and discounts.	$741,52 ,600	$699,582,600	$871,80 ,200
Deposits	88 ,022,500	795,917,300	963,917,500
Circulation	14,601,600	16,860,900	31,319,100
Reserve:			
Specie	197,207,800	162,765,100	192,825,000
Legal tenders	6 ,250,500	67,0 5,500	74,493,200
Total reserve.....	$257,458,300	$229,850,600	$267,318,200
Legal requirements ..	220,005,625	198,979,325	242,479,375
Balance, surplus....	$37,4 2,675	$30,871,275	$24,838,825

Changes for the week, this year, were increases of $30,440,900 in loans and discounts, $32,494,500 in deposits, $65,900 in circulation, $1,114,800 in specie and $1,048,200 in legal tenders, a decrease of $5,960,625 in surplus reserve.

The following table shows the specie holdings of the leading banks of the world at the latest dates covered by their reports. The amounts are reduced to dollars, and comparison is made with the holdings at the corresponding date last year:

	1900.		1901.	
Banks.	Gold.	Silver.	Gold.	Silver.
N.Y. Ass'd..	$162,735,100	.....	$192,825,000	.....
England....	177,509,655	.....	163,316 390	.....
France.. ...	379,151,610	$228,446,925	470,780,805	$219,104,735
Germany....	132,755,000	69,390,000	142,750,000	73,540,000
Spain..	68,000,000	74,260,000	70,005,000	82,815,000
Neth'l'ds....	21,800,000	30,075,000	25,140,000	28,375.000
Belgium....	14,420.000	7,210,000	14 570.000	7,2 5,000
Italy	77,060,000	7,530,000	77 820,000	9,240.00
Russia	428,650,000	27,575,000	366,390,000	31,710,000

The returns of the Associated Banks of New York are of date of February 2d and the others are of date February 1st, as reported by the "Commercial and Financial Chronicle" cable. The New York banks do not report silver separately, but the specie carried is chiefly gold. The Bank of England reports gold only.

The coinage executed at the mints of the United States in January, 1901, is reported by the Bureau of the Mint as below, comparison being made with the same month last year:

	Jan., 1900.		Jan., 1901.	
Denominations	Pieces.	Value.	Pieces.	Value.
Double eag es.	378,589	$7,571,600	.....	.....
Eagles	371,840	3,718,400	750,770	$7,507,700.00
Half eagles ...	39,000	195,000	1,029,900	5,149,500.00
Total gold...	792,420	$11,515,000	1,780,670	$12,657,200.00
Dollars.	1,550,000	1,550,000	2,198,000	2,198,000.00
Half-dollars...	660,320	330,161	416,000	208 000.00
Quar.-dollars..	1,312.000	328,000	444 00	111,000.00
Dimes	1,560,000	156,000	1,960.000	196,000.00
Total silver .	5,082,320	$2 364,161	5,018,000	$2,713,000.00
Five c. nickels.	2,211,000	110,550	2,121,0 0	116,050.00
One c. bronze..	6,372,000	63,720	3,743,000	37,430.00
Total minor..	8,583,000	174,270	5,864,000	$153,480.00
Total Coinage.	14,457,712	$14,053,431	12,662,670	$15,523,680.00

The increase in the total coinage this year equals $1,470,249, chiefly in gold coin.

Shipments of silver from London to the East for the year up to January 24th, 1901, are reported by Messrs. Pixley & Abell's circular as follows:

	1900.	1901.	Changes.
India.....	£317,727	£612,500	I. £264,773
China.....	42,335	44,375	I. 2,040
The Straits.....	.....	.....	....
Totals.....	£390,062	£656,875	I. £266,813

Arrivals for the week, this year, were £239,000 in bar silver from New York. Shipments were £173,000 in bar silver to Bombay.

Other Metals.

Daily Prices of Metals in New York.

February.	Sterling Exchange.	Silver. Fine oz. Cts.	Silver. London, Pence.	Copper. Lake, cts. ₩ lb.	Copper. Electrolytic ₩ lb.	Copper. London, £ ₩ ton.	Tin, cts. ₩ lb.	Lead, cts. ₩ lb.	Spelter. N. Y. cts.. ₩ lb.	Spelter. St. L. cts. ₩ lb.
2	4.88	60¾	....	16¾ @16⅞	16¼	....	26¼	4.32½ @4.37½	4.00	3.82½
4	4.88	61¼	28 1/16	16¾ @16⅞	16¼	71⅝	26¼	4.32½ @4.37½	3.97½	3.80
5	4.88	61⅜	28 1/16	16⅞	16¼ @16⅝	71¼	26¼	4.32½ @4.37½	3.97½	3.80
6	4.88	61	28 1/16	16⅞	16¼ @16⅝	71⅛	26⅛	4.32½ @4.37½	3.95	3.77½
7	4.88	60⅝	27⅞	16⅞	16¼ @16⅝	71⅛	26¼	4.32½ @4.37½	3.95	3.75
8	4.87¾	60⅛	27⅞	16⅞	16⅜	71¼	26¼	4.32½ @4.37½	3.92½	3.75

London quotations are per long ton (2,240 lbs.) standard copper which is now the equivalent of the former g. m b's. The New York quotations for electrolytic copper are for cakes, ingots or wirebars; the price of electrolytic cathodes is usually 0.25c. lower than these figures.

Copper.—During the week under review the market has displayed quite some activity. Consumers on this side have taken more interest in the article and a fair business resulted. European reports, however, continue to be rather depressed. We quote Lake copper at 16⅞c.; electrolytic in ingots, cakes and wirebars at 16¼@16⅜c., in cathodes at 16@16⅛c.; casting copper at 16¼c.

The market for standard copper in London, which ruled steady during the beginning of the week at £71 7s. 6d., declined on Wednesday to £71 2s. 6d., but closes firm again at £71 5s.@£71 7s. 6d. for spot and 10s. higher for three months.

Statistics for the second half of January show an increase in the visible supplies of 200 tons.

Refined and manufactured sorts we quote as follows: English tough, £74 15s.@£75 15s.; best selected, £77 10s.@£78 10s.; strong sheets, £86; India sheets, £82@£83; yellow metal, 6⅞@7d.

Tin continues rather dull and prices here have ruled below the parity of the London market. Consumers do not seem to take much interest in the article and the buying is restricted to the covering of their immediate requirements. At the close we quote spot at 26¼c., futures neglected.

The London market opened at £122 and has fluctuated between £122 and £123 practically during the entire week. The closing quotations are cabled as £121 17s. 6d.@£122 for spot, £117@£117 2s. 6d. for three months.

Statistics for the month of January show a decrease in the visible supplies of 400 tons.

The visible supply of tin on February 1st is reported as below, in long tons:

	Store.	Afloat.	Totals.
London	5,118	2,298	7,416
Holland	3,149	550	3,699
U. S., exc. Pacific ports....	3,323	3,915	7,238
Totals	11,590	6,763	18,353

The total shows an increase of 2,238 tons over January 1st, and an increase of 215 tons as compared with February 1st, 1900.

Lead continues in fair demand. Quotations are unchanged at 4.17½@4.32½c. St. Louis, 4.32½@4.37½c. New York.

The foreign market is still rather depressed, and while spot lead seems to be somewhat scarce, futures are practically unsalable. Spanish lead is quoted at £15 2s. 6d.@£15 5s., English lead at £15 5s.@£15 7s. 6d.

Spelter.—The market seems to be utterly demoralized and the reported shut-down of about 60% of the zinc mines has made no impression. There is some prompt metal pressed for sale and we understand that lower prices have again been accepted. We quote St. Louis at 3.75@3.80c., New York at 3.95c.

The foreign market is also lower again, good ordinaries being quoted at £17 5s.@£18, specials at £18@£18 5s.

Antimony is in fair demand, but there are rather heavy stocks here at present which prevent any upward movement in price. Cookson's is quoted at 10c.; Hallett's, 9@9¼c.; Hungarian, 8½@8¾c.; Italian, 8¾c.; U. S. Star, 8¾@9c.

Nickel.—The price continues firm at 50@60c. per lb., according to size and terms of order.

Platinum.—Consumption continues good and prices are strong. For ingot platinum in large quantities $18.20 per Troy oz. is quoted in New York. In London a recent quotation gives 75s. per ounce, unmanufactured, and 77s. 6d.@80s. for crucibles, etc. This is very nearly on a parity with New York prices.

Chemical ware (crucibles and dishes), best hammered metal from store in large quantities, is worth 72c. per gram.

Imports of platinum into the United States for the year 1900 were 7,606 lbs., against 6,705 lbs. in 1899; an increase of 901 lbs., or 13.4%, last year.

Quicksilver.—The New York quotation continues unchanged at $51 per flask for large lots, with $52.50@$54 asked for small quantities. San Francisco prices are $48@$48.50 on local deliveries, and $43.50@$44 on export orders. The London price is £9 2s. 6d per flask, with the same price named from second hands.

Exports of quicksilver from the United States in 1900 are reported at 778,191 lbs., against 1,264,372 lbs. in 1899; a decrease of 486,181 lbs., or 38.5%, this year.

Minor Metals and Alloys.—Wholesale prices, f. o. b. works, are as follows:

Aluminum.	Per lb.		Per lb
No. 1, 99% ingots.....	33@37c.	Ferro-Titanium (20%)...	$1.00
No. 2, 90% ingots...	31@34c.	Ferro-tungsten (37%).....	32c
Rolled sheets.	42c. up	Magnesium	$2.75@$3
Alum.-bronze.....	20@23c.	Manganese (over 99%)..	$1.05
Nickel-alum.....	33@39c.	Mangan'e Cop (20% Mn)..	32c.
Bismuth.....	$2.25	Mangan's Cop (30% Mn)..	38c.
Chromium (over 99%)....	1.00	Molybdenum (Best)....	$1.45
Copper red oxide.....	50c.	Phosphorus.....	50c.
Ferro-Molyb'um (50%)..$1.00		American	70c.
Ferro-Titanium (10%)....	90c.	Tungsten (Best).....	80c.

Variations in prices depend chiefly on the size of the order.

LATE NEWS.

European dispatches report the outbreak of a fire in the oil district of Baku in Russia, which seems to have attained enormous proportions. The latest cable dispatch says: "Fully 500 persons perished in the conflagration at Baku. The flames are again beyond control. The police station, ten large tenements, 500,000 tons of mazout (residue), 350,000 tons of naphtha and all the Rothschild reservoirs were burned. Tonmeuse Lake is burning. The mazout caused explosions, which killed many of the spectators."

A dispatch from Bristol, Tenn., February 7th, says: "A decree was entered in the United States Circuit Court at Harrisonburg, Va., appointing Cornelius Shields, of Bristol, and Henry K. McHarg, of New York, receivers for the Virginia Iron, Coal and Coke Company, with headquarters at Bristol. The capital involved is $10,000,000. The company owns valuable coal and iron propery in Virginia, Kentucky and Tennessee. It also owns a dozen iron furnaces, large coke plants and kindred enterprises. The decree provides that all interests be protected. Receiver Shields states that the receivership does not indicate a collapse, but will rather conserve the interests of all concerned. Operation will go forward under receivers without any stoppage."

Little that is not given elsewhere has been ascertained as to the transfer of the Carnegie Company. The following points, however, seem to be fully confirmed as we go to press:

First—That an agreement has been reached between Messrs. Morgan and Carnegie whereby the latter's stock is to be purchased at a definite price.

Second—That the purchase price will not require the transfer of the full amount in cash, as Mr. Carnegie will take the remainder of the purchase price in guaranteed bonds, either of the Carnegie Company, for which a goodly part of his stock shall be deposited as collateral, or in bonds of other steel companies, in which Morgan interests are dominant.

Third—That Mr. Morgan has issued invitations to other large financial interests to join in a syndicate to finance the transaction.

(From Our Special Correspondent.)

Utah Bullion and Ore Shipments.—During the week ending February 2d there was sent forward from the several smelteries 18 cars, or 802,731 lbs., of silver-lead bullion; 79 cars, or 3,275,610 lbs., of silver-lead ores; and 4 cars, or 210,911 lbs., of copper bullion; making a total shipment of 101 cars, or 4,289,250 lbs.

Juab County—Utah.

(From Our Special Correspondent.)

Tintic Shipments.—For the week ending February 2 there were sent forward from the 3 railroad points of Tintic 110 cars of ore, made up as follows: Centennial-Eureka, 29 cars; Gemini, 7; Humbug, 1; Bullion Beck 1; Mammoth, 13; Grand Central, 18; Lower Mammoth, 6; Carissa, 10; Ajax, 2; Tesora, 4; Swansea, 6; South Swansea, 4; Star Consol, 7; Shoebridge Bonanza, 1; Showers Consolidated, 1.

Gilpin County—Colorado.

(From Our Special Correspondent.)

Mining Deeds and Transfers.—R. J. Jones to M. R. Ames, 1/6 interest in Robert Fulton, Gladstone and Livingstone Lodes; H. H. Gilstrap to J. B. Weeber, ½ interest in Lake View Lode; H. Burr to C. Burr, the Pay Rock Lode; D. O. Sullivan to W. Hotchkiss, the Syndicate Lode; H. M. Orahood to J. M. Smyth, the Virginia Lode in Quartz Valley District for $10,000.

Powers.—A good body of enargite ore has been opened up in the 150 east level, which is expected to carry good values. The property is worked by Chamberlain Hackett under management of Mr. Kirby, of Central City.

CHEMICALS AND MINERALS.

(For further prices of chemicals, minerals and rare elements, see page 194.)

New York. Feb. 8.

Heavy Chemicals.—Second-hands control the spot market. They are selling domestic high-grade alkali at 76¼@76½c. per 100 lbs., while makers who are well supplied with yearly contracts quote as below: Bleaching powder has sold ex-store at $1.75@$2 per 100 lbs., while importers give their yearly contract prices as below. Chlorate of soda on spot has sold at 9¼c. per pound, while contracts were taken at 9⅜c.

We quote per 100 lbs. as follows: Domestic soda ash in bulk is worth 2¼c. per 100 lbs. less than quotations below:

Articles.	Domestic.		Foreign.
	F.o.b. Works.	In New York.	In New York.
Alkali, 58%.	80@82½	....	85@87½
" 48%.	82½@85	....	.....
Caustic Soda, high test ..	$1.80@$1.85	.....	1.85@1.87½
powd. 60%	.....	2.75	.....
70@74%.	.....	2.85	.....
98%.	....	3 25	3.75@4.00
Sal Soda 50		60	65
"conc.	1.12½@1.75	....	1.75
Bicarb. Soda..	1.12½@1.25	.....	1.37½@1.75
" " extra	3.25@3.50	.....	.....
Bleach Pdr., Eng. prime..	.....	....	2.00@2.10
other brnds.	....	.....	1.80@1.95
Chl. Pot cryst	....	8.25@8.50	10.00@10.25
" powd.	....	8.50@8.75	10.25@10.50

Alcohol.—Refined wood alcohol has declined 15c. a gallon, 95@97% being quoted now at 60@65c., while purified is worth from 20@50c. a gallon. Increased production and subsequent competition, particularly with the smaller concerns, has occasioned this break in prices.

Potassium Cyanide.—Easier, owing to a weaker foreign market. New York quotations are 27½@28c. per lb., but these prices can doubtless be shaded for large quantities.

Permanganate of Potash.—Weaker at 11@11¼c. per lb. for small crystals.

Prussiate of Potash.—The works of the Mutual Chemical Company at Jersey City, N. J., having an annual output of over 1,000,000 lbs., were totally destroyed by fire on February 5th. As yet this has had no effect on the market, which is more or less unsettled at 15@16c. per lb. for yellow.

Zinc Dust.—Owing to less demand, prices are lower at 7@7½c. per lb., according to quantity.

Acids.—Sulphuric makers are increasing their output, especially of pyrites acid, but as contract deliveries are good there is little accumulation of stocks. Acetic acid is still unsettled. Blue vitriol is firm, owing to better export inquiries.

Quotations as below are for large lots delivered in New York and vicinity, per 100 lbs. unless otherwise specified.

Acetic, No 8	$1.62½	Nitric, 36°	$3.87½
Blue Vitriol	5.00@5.25	Nitric, 38°	4.12½
Aqua Fortis, 36°	3 62½	Nitric, 40°	4.37
Aqua Fortis, 38°	3 87½	Nitric, 42°	4.75
Aqua Fortis, 40°	4.12½	Oxalic	5.75@6.00
Aqua Fortis, 42°	4.50	Sulphuric, 66°	1.20
Muriatic, 18°	1.20	Sulphuric, 60°	1.05
Muriatic, 20°	1.35	" bulk 50° ton	14.00
Muriatic 22°	1.50		

Brimstone.—New York arrivals this week were 850 tons, making 6,945 tons since January 1st. Market is quiet. Spot best unmixed seconds have sold at $22@$22.50 per ton, and for shipment at $21.50@$21.75, while best thirds are $2 less per ton. In January the average price of spot best unmixed seconds was $22⅝ per ton, while shipments were $21.45 and best thirds $2 less.

Pyrites.—Imports at New York this week were 199 metric tons iron pyrites and 3,466 tons copper pyrites from Huelva, Spain. Consumption is up to the average and deliveries are chiefly on contract. Word is received here that the new Mansurial iron pyrites mine near Bougie, Algeria, will soon begin operations. The ore contains from 48 to 52% sulphur, and is free from copper and arsenic, it is said. We quote as follows: Mineral City, Va., lump ore (basis 45%), $4.90 per long ton, and fines $4.50. Charlemont, Mass., lump, $5.50 and fines $5. Spanish pyrites, 12s. delivered ex-ship New York and other Atlantic ports. Spanish pyrites contain from 46@51½% of sulphur; American from 42@44%.

Fertilizing Chemicals.—So far this month selling has been confined chiefly to Southern consumers, who begin to feel the good price paid for cotton. Otherwise trade is quiet, though the leading ammoniates continue firm. New potash salt prices will be announced soon, and it is expected sulphate of potash and double manure salt will be advanced. Concerning the production of sulphate of ammonia in the United Kingdom in 1900, an estimate is as follows: Gas works, 138,000 long tons; shale works, 39,000 tons; iron works, 18,000 tons; carbonizing and coke works, 15,000 tons; total, 210,000 tons; chiefly from England. The world's production in 1900 is roughly estimated at 430,000 long tons, of which about 350,000 tons were used by fertilizer makers and the balance was used for ammonia soda and other chemical purposes. Sulphate of ammonia gas liquor is worth $2.77½ per 100 lbs. on spot and $2.82½@$2.85 for this and next month's shipment. Other quotations are: High-grade blood, $2.25@$2.30 per unit, f. o. b. Chicago; tankage, 9 and 20, $2.10 and 10c. per unit, f. o. b. Chicago; Calcutta bone-meal, $24 per ton for best grades and $20 for other sorts; domestic steamed ground bone, $18.50@$19.50 per ton, as to purity.

Nitrate of Soda.—The steamer "Cuzco," which arrived at Charleston last week, brought 17,841 bags of nitrate of soda to New York this week. Part of this cargo sold at $1.82½ per 100 lbs., and at the close quotations are again firmer at $1.80@$1.82½ per 100 lbs. for spot and $1.85 for shipment. Freight rates are stronger. Advices from Europe state that the Elbe has frozen up and, in consequence, shipments to German consumers have been curtailed. January shipments to Europe are reported at 90,000 long tons, as against 75,792 tons last year, showing an increase of nearly 15,000 tons. The European visible supply on February 1st is claimed to show a surplus of about 100,000 tons over last year, when it was 726,680 tons. Much comment is made abroad on the "quotas" granted to each oficina by the new combination. It is contended that where 17 oficinas made 54% of the nitrate produced in Chile in 1900, 25 companies are allowed only 50% of the reduced production and 11 of them are expected to surrender 3,500,000 qtls. toward the rehabilitation of their weaker neighbors. The chief sufferers, says this British correspondent, are the Alianza Company (1,100,000 qtls.), and the Lagunas Syndicate (900,000 qtls.), the only approximate contribution on the Chilean side being that of 850,000 qtls. by Granja Dominiquez y Astorica, the largest producers of all, who in 1900 made 4,200,000 qtls, as against the 3,000,000 qtls. of the Alianza Company. It is further said that few oficinas can, under present conditions, place nitrate of soda on the drying floors at less than $1 per qtl., and the cost is considerably higher to less favorably situated companies. Comment is also made on the heavy stocks in Chile, amounting on January 1st, 1900, to 6,500,000 qtls., which must be exported before April 1st, this year, according to the "convenio." The shipments in 1901 will aggregate, it is believed, 31,250,000 qtls., which, it is estimated, will exceed the world's consumption.

Messrs. Mortimer & Wisner's monthly statement of nitrate of soda, dated February 1st, gives the following statistics:

	1901.	1900.	1899.
	Bags	Bags.	Bags
Imp. into Atlantic ports from West Coast S. A., from Jan. 1, 1901, to date.	74,784	38,925	69,598
Imp. from Jan. 1 from Europe	.....	.....	.....
	74,784	38 925	69,598
Stock in store and afloat Feb. 1, 1901, in New York	6,491	9,094	48,860
Boston..	.....	.....	.....
Philadelphia	.....	.....	.....
Baltimore	.....	750	3,000
Norfolk, Va	.....	.....	.....
Charleston	.....	.....	.....
To arrive, due May 15, 1901.	420,000	343,000	212,000
Vis. supply to May 15, 1901.	426,494	352,844	263,860
Stock on hand Jan. 1, 1901..	13,446	9,586	58,406
Deliveries past month	81,736	38,667	76,144
Total yearly deliveries....	.....	1,176,651	976,592
Prices current, Feb. 1, 1901.	$1.85	$1.82½	$1.62½

Saltpeter.—In January the imports into the United States were 3,229 bags, as against 9,642 bags last year. Stocks at New York on January 31st were 2,600 bags, and expected arrivals 12,868 bags, making the visible supply 15,468 bags, against 23,800 bags last year. Deliveries in January were 4,029 bags, or 2,713 bags less than last year. Crude saltpeter on spot is worth $3.50 per 100 lbs., and for shipment, $3.20. These prices are fractionally less than last year.

Phosphates.—Trade is quiet. In Florida miners are still accumulating stocks, while in South Carolina easier freight rates have facilitated shipments. This week the stockholders of the Charleston Mining and Manufacturing Company, of Fetteressa, S. C., authorized an issue of $1,000,000 in bonds, covered by a mortgage of the franchises and property of the company in South Carolina. Mt. Pleasant, Tenn., miners are firmer in their views, though business is limited.

The Peace River (Fla.) Phosphate Mining Company shipped through Punta Gorda in January, 3,680 tons of phosphates to domestic ports and nothing to foreign.

Phosphates.	Per Ton F. o. b.	C. i. f. Un'd Kingdom or European Ports.	
		Unit.	Long ton.
*Fla. hard rock (77@80%)	$6.50@7.00	7⅝@8d	$11.90@12.48
*Fla. land pebble (68@73%)	3 85@4.00	6¼@7d	9 10@9.80
*Fla. Peace River (58@63%)	2.50@2.75	6@6¼d	7.20@7.80
†Tenn. rock 78%, export.	3.00@3.25	7@7⅛d	10.92@11.12
†Tenn.....78% domestic.	2.75@3 00	.....	.....
†Tenn.....75% "	2.50@2.75	.....	.....
†Tenn.....72% "	2.25@2.50	.....	.....
‡So. Car. rock, crude....	3.75@4.00	.....	.....
§So. Car. rock, dried.....	4.50	6¼d	7.80
Algerian, rock...(63@70%)	.....	7@7⅛d	9.24@9.51
Algerian, rock...(58@63%)	.....	6¼@7d	7.80@8.40

* Fernandina. † Mt. Pleasant. ‡ At mines. § On vessels, Ashley River.

MINING STOCKS.

Complete quotations will be found on pages 190 and 191 of mining stocks listed and dealt in at:

Boston.	Salt Lake.	Montreal.
Colo. Springs.	San Francisco.	London.
Denver.	Spokane.	Mexico.
New York.	St. Louis.	Paris.
Philadelphia.	Toronto.	

New York. Feb. 8.

The mining market is dull. Coppers are depressed. Amalgamated sold down from $91¼ to $89⅝, but recovered later to $90⅛. Anaconda ruled at $44¼@$43¼, closing around $44. British Columbia was weak, selling off to $18½, and Union of North Carolina at $3⅞. Both, however, show slight gains at the close.

Ontario of Utah made sales at $6¼@$6¼, and Horn Silver at $1.17. Alice of Montana sold again at 48c. Brunswick of California advanced rapidly to 40c.—the highest in some time, in anticipation of a consolidation with Standard Consolidated.

Colorado stocks fluctuate little. Jack Pot of Cripple Creek brought 64c., and Iron Silver of Leadville, 68c.

Comstock shares are featureless, few sales being made. Consolidated California & Virginia sold at $1.55, and Ophir at 60c.

The industrial stocks show good advances. The coal group was agreeably affected by the 2% semi-annual dividend on Reading first preferred stock, raising the price of that stock to $77. Standard Oil was also higher at $816 on declaration of an increased quarterly dividend of $20, putting the stock on an 80% basis, as against 48% last year. Iron and steel securities are bullish owing to the big consolidation pending. As a result large sales of American Steel and Wire are reported; the common shares on Wednesday reaching $52⅛, and the preferred at $95; National Steel common, $49, and the preferred $95; while similar advances were made in the other combination stocks.

Auction sales were 200 preferred shares New River Mineral Company, of Virginia, par $100, at $5 for lot; 250 shares Interstate Oil Company, of West Virginia, par $50, at $2⅜ per share; and 77 shares Ohio & Indiana Consolidated Natural and Illuminating Gas Company, at $19½.

The New York & West Virginia Coal Company, with $1,000,000 capital, contemplates developing 12,000 acres of coal land near Morgantown, W. Va. The land will be opened by the Cassville & Monongahela Railroad running from the Monongahela River to Cassville, about 10 miles west. James A. Milholland is promoting the project.

Boston. Feb. 6.

(From Our Special Correspondent.)

The market this week has been much broader and stronger, though it is noticeable that outside trading runs largely to the Lake coppers, business in the blind pool stocks being mainly of a professional kind. Some of the newer coppers are attracting attention, notably Copper Range, which sold as high to-day as $42@$42½, while Baltic brought $37.

The gold stocks are hardly as strong, and sales have been comparatively light.

Dominion Coal is higher, touching $37½, while New England Gas and Coke was quoted up to $14½ to-day.

The latest copper flotation seems to be too airy in its nature for even Boston buyers. I hear to-day on good authority that the public subscriptions to the stock of the Arimex Consolidated Copper Company are not forthcoming. Doubtless we shall be told—to encourage the others—of large blocks taken; but the names of the subscribers will not be given, and the nature of the subscriptions will be well understood by those who are posted.

The calendar of the United States Court at Butte for the February term indicates that its time will be taken up largely by mining litigation. The following cases will come up:

Actions in equity: Montana Ore Purchasing Company vs. E. Rollins Morse; Franklin Farrell and Achille F. Migeon vs. Boston & Montana Consolidated Copper and Silver Mining Company; Colusa-Parrot Mining and Smelting Company vs. Anaconda Copper Mining Company; Franklin Farrell and Achille F. Migeon vs. Montana Ore Purchasing Company; Butte & Boston Consolidated Mining Company vs. Montana Ore Purchasing Company; Edwin Davis vs. Andrew J. Davis et al.; Anaconda Copper Mining Company vs. Colusa-Parrot Mining and Smelting Company; James Larkin, insane, by J. R. Watson, his guardian ad litem, vs. Butte & Boston Mining Company et al.; W. J. Ladd vs. Montana Ore Purchasing Company et al.; Butte & Boston

Consolidated Mining Company vs. Montana Ore Purchasing Company; Colusa-Parrot Mining and Smelting Company vs. Anaconda Copper Mining Company.

Actions at law: Butte & Boston Consolidated Mining Company vs. Montana Ore Purchasing Company; Butte & Boston Consolidated Mining Company vs. Montana Ore Purchasing Company; Boston & Montana Consolidated Copper and Silver Mining Company vs. Montana Ore Purchasing Company; Parrot Silver and Copper Company vs. Colusa-Parrot Mining and Smelting Company; Thomas Camp vs. Colusa-Parrot Mining and Smelting Company; Colusa-Parrot Mining and Smelting Company vs. Anaconda Copper Mining Company.

The law calendar is made up as follows:

Lulu F. Largey, administratrix, etc., vs. Boston & Montana Consolidated Copper and Silver Mining Company, on demurrer; Anaconda Copper Mining Company vs. Colusa-Parrot Mining and Smelting Company, on demurrer to complaint.

The motion calendar is as follows: Colusa-Parrot Mining and Smelting Company vs. Anaconda Copper Mining Company, on motion for settlement of plaintiff's bill of exceptions; Anaconda Copper Mining Company vs. Colusa-Parrot Mining and Smelting Company, an order to show cause.

Colorado Springs. Feb. 2.

(From Our Special Correspondent.)

At the annual meeting of the Golden Cycle Mining Company in Denver, January 31st, elections were: John T. Milliken, president; F. L. Ballard, vice-president; F. J. Campbell, general manager, and L. E. Hill, secretary and treasurer.

At the annual meeting of the Magnet Rock Gold Mining Company in Colorado Springs, Feb. 2d, the sale of the Lucky Corner claim to the Doctor-Jack Pot Consolidation was ratified. It was decided to adopt the leasing policy for the rest of the property and to get strong lessees on the different claims as soon as possible. The claims owned are the Monte Christo on Bull Hill and the Hillside and Sherman on Gold Hill. Directors elected were as follows: Clarence Edsall, J. J. Key, J. R. Buckman, W. E. Jones and T. C. Strachan.

The reversal by the Secretary of the Interior of the decision of the Commissioner of the General Land Office about mining claim surveys is well received here. Until some months ago it was the custom in making surveys for a patent to run the lines across other patented property. The Commissioner of the General Land Office decided that this could not be done, but the Secretary of the Interior has reversed the ruling.

Salt Lake City. Feb. 2.

(From Our Special Correspondent.)

This week on the local Exchange shows a total sale of 206,078 shares, amounting to $131,531, a decided increase over the week previous, which amounted to but 144,043 shares, bringing $87,810. Lower Mammoth did not stand up, and dropped from $4.21 to $4.01, closing under the $4 mark. Grand Central stepped from the closing bid of $5.50 last week to $6.05. Ben Butler, which 10 days ago was offered at 1c., with no takers, is now active at above 10c. A reported strike of rich galena is the cause of this rapid advance.

Star Consolidated experienced quite a lively movement and fluctuated between 80c. and 86c. during the week. May Day improved 2c. Consolidated Mercur rallied and managed to get above the $3 point again, with light transfers.

During the month of January the sum of $181,000 was paid to shareholders in mining properties listed on the local Exchange. The following-named mines have contributed: Centennial-Eureka, $50,000; Daly-West, $45,000; Rocco-Homestake-Nevada, $4,500; Swansea, $5,000; Silver King, $75,000; Silver Shield, $1,500.

Exclusive of Consolidated Mercur, the Horseshoe and Sacramento's output, and Ontario's bullion, all of which has been marketed outside the State, the ore and bullion settlements for January amounted to $1,202,949.

The Dalton directors have organized by electing the following officers: B. A. McMillan, president; J. H. Lakin, vice-president; Chas. M. Garrison, secretary; A. H. Adkison, treasurer; O. H. Young, manager.

Thomas Kearns, the principal shareholder of Silver King, was recently chosen United States Senator and is in Washington.

In the week of February 2d the Park City shipments, as reported by the Mackintosh Sampler, was 2,714,430 lbs., representing the output of the camp. The several contributors were: Silver King crude, 975,280 lbs.; Anchor concentrates, 662,390 lbs.; Daly-West crude, 772,670 lbs.; Ontario concentrates, 304,090 lbs.

San Francisco. Feb. 1.

(From Our Special Correspondent.)

While prices have been a little better and the market ostensibly firmer, there has not been any increase in the volume of business. Transactions continue small and of the usual class. No public interest is shown in the Exchange.

Consolidated California & Virginia sold up to $1.65; Ophir, 65c.; Mexican, 28c.; Best & Belcher, 28c.

Sales on regular call at the San Francisco Stock Exchange in January were 312,385 shares. This is nearly double the sales of January, 1900, which were 164,400 shares.

A special meeting of the stockholders of the Mexican Mining Company has been called for February 16th to vote upon a proposition to purchase from the Ophir Mining Company an undivided one-half interest in the Summit and Last Chance mining claims for $1,500, and also to purchase the Clemmons and J. B. Overton mining claims for $1,500 and then sell an undivided one-half interest in the two latter claims to the Ophir Mining Company for $750.

The Oil Exchange was lively and a steady demand for stocks has been manifest. Some of the prospects were weaker in price, but the dividend-paying stocks have been generally stronger. Hanford sold for $123; Oil City, $35; San Joaquin Oil and Development, $13; Peerless, $8.50; Home Oil, $4.15; Monte Cristo, $2.40; Wolverine, $1.75; Caribou, 70c.; Four Oil, 56c.; California Standard, 38c.; Lion, 23c.

Among the prospects Four Oil, California Standard, Caribou and Lion seemed to be special favorites. The list is continually extending.

The Beautiful Belle Mining Company has been organized to develop a rich ledge in the Hedges Mountains near the American Girl Mine. The directors are F. H. Buckmaster, M. L. Hazzard, E. M. Wheatland, J. H. Coverly and F. L. Gunn. A large amount of rich ore is said to be in sight, and the erection of a milling and cyanide plant is contemplated.

London. Jan. 26.

(From Our Special Correspondent.)

The following "private and confidential" circular concerning Stratton's Independence has been issued from the office of Izard & Izard, accountants, No. 52 Gracechurch Street, London, under date of January 7th, 1901:

"A meeting has now been held of the several shareholders who are moving in this matter. It was decided in the first place to instruct Mr. Barry Cohen to take the opinion of a leading counsel with reference to the whole position, and especially with regard to the conduct of the directors and the rights and remedies of the shareholders, and also of those persons who have had shares and have lost money through the depreciation in their value. It was resolved that it would be best that no final decision should be arrived at until counsel's opinion had been obtained, and that no one should pledge himself to any course in the meantime. Various different views were expressed, some desiring to recover damages, others an invstigation, and all wishing to obtain such reforms in the management as would establish this company on a firm and satisfactory basis with a view to a successful future. It was regarded as certain that after an opinion had been obtained, unity of action could be established.

"It was decided to raise funds in the first place to cover the expense of preparing a case and obtaining counsel's opinion thereon, and the expenses relating to circularizing shareholders, and that the liability should be strictly limited to the amount actually paid and contributed for these purposes. The question whether this should be arranged by assessment pro rata, or otherwise, was fully discussed, and it was decided that it was impossible to arrange at present for an assessment per share, as some of those who wished to join in the movement were no longer shareholders, having realized and ascertained their loss, while others had only retained a small number of shares. Under these circumstances it was considered best that all those who desire to join in this preliminary movement should be at liberty to subscribe toward the expenses, such reasonable sum as each may wish to contribute.

"We have been instructed to issue this notice, and invite co-operation. After counsel's opinion has been obtained the result will be communicated to all those who are co-operating and with regard to the proceedings which may be decided upon all those who wish to co-operate further will be consulted as to the basis of an assessment toward the expenses thereof. We shall be glad to hear if you will co-operate in the preliminary movement for obtaining an opinion, and should you decide to do so, the shareholders above referred to will be obliged by your remitting to Messrs. Cohen & Cohen, solicitors, 2 Finsbury Circus, London, the amount you are willing to contribute."

Paris. Jan. 26.

(From Our Special Correspondent.)

The mining stock market has been quiet, though one can hardly say it is depressed. In some quarters there have been reactions, and in none is there marked activity.

The metallurgical shares are, one must believe, in a critical condition. They are facing a period of reduced orders and greater competition, with increased expenses. The public, however, does not fully appreciate the conditions, and there has been very little fall in prices.

The Russian group, however, is feeling the effects of industrial conditions in the Empire. One can hardly say that prices are lower, because there are really no quotations. The stocks are entirely neglected.

The zinc and lead shares are lower, chiefly because prices of the metals are uncertain. Copper shares, however, are steady and fairly strong.

Your figures of gold production in 1900, as given in your admirable number for January 5th, are attracting much attention. M. Pierre Leroy-Beaulieu devotes three pages in "L'Economiste Francais" to an appreciative discussion of your statements. His article is a very interesting one.

The death of Queen Victoria has really had little effect here, except so far as business may be delayed by the closing of the London markets. In some quarters it is said that a settlement in the Transvaal may be more easily effected under the new king. Those who are well informed, however, do not look for any change in the policy of the British Government. The comments on the Queen in Paris are generally moderate and in good taste, only a few journals—and those of no standing—having anything unbecoming to say.

M. Kruger seems to have dropped out of sight. One reads of the exploits of Botha and De Wet in the Transvaal, but the President is no longer noticed.

Azote.

DIVIDENDS.

NAME OF COMPANY	Latest Dividend. Date.	Per share.	Total.	Total to date.
Atlantic Copper	Feb. 9	2.00	80,000	880,000
Bethlehem Steel	Mar. 1	.50	150,000	1,050,000
†Boston & Mont. Cop.	Feb. 20	5.00	750,000	22,475,000
Boston & Mont ,extra.	Feb. 20	5.00	750,000	.....
*B.-Hill & Sulli , Ida.	Feb. 4	.07	21,000	1,095,000
Cambria Steel	Feb. 15	.50	160,000	1,760,000
*Central Lead, Mo	Feb. 15	.50	5,000	212,000
Colo Fuel & Iron, pf.	Feb. 15	4.00	80,000	1,240,000
Continental Oil, Cal.	April 1	.03	7,200	7,200
Croesus, Cal.	Feb. 1	.06	12,000	165,300
*Daly West, Utah	Feb. 15	.30	45,000	697,500
*Empire State, Idaho.	Feb. 15	.10	51,000	753,243
Federal Steel com	Feb. 20	5.00	2,324,215	4,067,377
General Chem., com.	Mar. 1	1.00	70,703	482,517
*Helena, Oregon	Feb. 25	.01	10,000	60,000
Jeff.& Cl'rf'ld Coal, pf	Feb. 15	2.50	25,000	350,000
*La F'runa Gold, Ariz.	Feb. 9	.05	12,500	925,000
Last Dollar, Colo.	Feb. 11	.02	30,000	150,000
*Modoc, Colo	Feb. 15	.05	5,000	215,000
†National Tube, com.	Feb. 15	1 50	597,906	.....
Quincy Copper	Feb. 25	3.00	300,000	12,270,000
*Rocco-H'mestke,Nev	Feb. 10	.01¼	4,500	13,500
*Silver King Utah	Feb. 10	.66⅔	100,000	3,550,000
*Silver Shield, Utah.	Feb. 9	.00½	1,500	4,500
*Smuggler, Colo.	Feb. 15	.03	30,000	1,790,000
Standard Con, Cal.	Feb. 21	.10	20,000	3,999,226
Standard Oil	Mar. 15	20 00	19,500,000	92,625,000
S'day Lake I'n, Mich.	Feb. 15	1.00	40,000	.....
*Swansea, Utah	Feb. 9	.65	5,000	286,500

*Monthly. †Quarterly.

ASSESSMENTS.

NAME OF COMPANY.	Location.	No	Delinq.	Sale.	Amt.
Belcher	Nev..	67	Feb. 6	Feb. 27	.10
Canton Placer	Cal..	1	Feb. 5	Feb. 25	.05
Caribou Oil	Cal..	...	Feb. 12	.....	.10
Centennial	Mich	...	Apr. 12	.....	2.00
Central Mammoth	Utah	1	Feb. 15	Mar. 5	.00¼
Confidence	Nev..	36	Jan. 30	Feb. 21	.20
Excelsior	Utah	...	Feb. 11	Mar.20	.00½
Gold Hill	Utah	2	Feb. 13	Mar. 11	.01
Gonyon	Utah	..	Feb. 5	Feb. 25	.00¼
Larkin	Cal..	9	Feb. 25	Mar. 18	.02
Mariposa Com'l & Mg.	Cal..	20	Feb. 11	Mar. 2	10.00
May Day	Cal	5	Jan. 8	Feb. 19	.05
Meteor	Utah	...	Jan. 31	Mar. 7	.00½
Northern Light	Utah	..	Feb. 19	.....	.02
Occidental Con	Nev..	36	Jan. 31	Feb. 21	.05
Orleans	Cal..	10	Jan 19	Feb. 16	.03
Potosi	Nev..	58	Feb. 19	Mar. 14	.10
Raymond	Utah	1	Feb. 12	Mar. 1	.05
Reward	Cal	...	Feb 13	.....	.02½
R. G. W.	Utah	...	Jan. 28	Feb. 16	.00½
Salt Lake	Utah	..	Mar. 2	Mar. 22	.00½
Shoebridge Bonanza..	Utah	7	Feb. 25	Mar. 18	.01
Silver King	Ariz.	22	Jan. 22	Feb. 19	.25
Sierra Nevada	Nev.	121	Feb 20	Mar. 14	.15
Susquehanna Con	Cal..	...	Feb. 11	...	.02
Tanana	Cal..	2	Feb. 13	Mar. 6	.10
Tetro	Utah	17	Feb. 14	Mar. 11	.01
Utah Con	Nev..	35	Feb. 1	Feb. 21	.05
West Argent	Utah	1	Jan. 23	Feb. 9	.02
West Mtn. Placer	Utah	...	Feb. 23	Mar. 9	.03
Yuba River	Cal..	2	Feb. 9	Mar. 5	.03

ANNUAL MEETINGS.

Name of Co.	Locat'n.	Date.	Place of Meeting.
*Am. Sm.& Ref.	.....	Feb. 16	Jersey City, N.J.
Am. Steel & W.	U. S.	Feb. 21	71 Broadway, N. Y.
Canton Placer	Cal.	Mar. 6	San Francisco, Cal.
Caribou McK.	B. C.	Feb. 12	Toronto, Can.
Con. Coal	Md	Feb. 20	Baltimore, Md.
Daly	Utah	Feb. 18	Salt Lake City, Utah.
Eureka Hill	Utah	Feb. 19	Salt Lake City, Utah.
Gold Hill Copper	N. C.	Feb. 20	60 Grand St., J. C N.J
*Jamison	Cal	Feb. 11	San Francisco, Cal.
Maryland Coal	Md.	Feb. 5	1 Broadway, N. Y.
Moon Anchor	Colo.	Feb. 15	Colo. Springs, Colo.
National Lead	.....	Feb. 21	Jersey City, N.J.
P. Henry I. Ore.	N. Y.	Feb. 12	56 Pine St., N. Y.
Trimountain.	Mich	Feb 13	60 State St., Boston.
.....	.....	.....	.....
.....	.....	.....	.....

*Special Meeting.

STOCK QUOTATIONS.

NEW YORK.

NAME OF COMPANY.	Location.	Par val.	Feb. 1. H.	Feb. 1. L.	Feb. 2. H.	Feb. 2. L.	Feb. 4. H.	Feb. 4. L.	Feb. 5. H.	Feb. 5. L.	Feb. 6. H.	Feb. 6. L.	Feb. 7. H.	Feb. 7. L.	Sales
Adams	Colo..	10	.....	.....	.....	.....	.....	.....	.25	.....	.....	.....	.....	.....	300
Alamo	Colo..	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,500
Alice	Mont.	25	.....	.....	.....	.....	.48	.....	.....	.....	.....	.....	.....	.....	500
Amalgamated c..	Mont.	100	91.75	89.50	.....	.....	91.25	89.63	90.63	89.75	91.00	90.13	90.50	.....	41,835
Anaconda, c....	Mont.	25	44.00	42.50	.....	.....	44.00	43.25	42.25	44.00	44.25	43.75	44.50	.....	7,270
Anaconda Gold..	Colo..	5	.46	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	300
Argentum-Jun..	Colo..	2	.....	.....	.....	.....	.26	.....	.....	.....	.....	.....	.....	.....	500
British Col. Cop.	B. C ..	5	20.63	20.25	.....	.....	20.50	20.25	20.50	20.25	19.50	18.50	20.00	19.50	1,000
Brunswick Cons.	Cal. ..	1	.31	.....	.....	.....	.33	.....	.40	.33	.40	.....	.....	.....	7,500
Comstock T....	Nev ..	100	.....	.....	.....	.....	.04½	.....	.....	.....	.....	.....	.....	.....	1,000
Con. Cal. & Va..	Nev ..	2½	1.55	.....	.....	.....	1.55	.....	.....	.....	.....	.....	.....	.....	400
Creede & C. C...	Colo..	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cripple Cr. Con .	Colo..	1	.12	.11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4,000
Elkton	Colo..	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gold Dollar	Colo..	1	.28	.26	.....	.....	.....	.....	.27	.....	.27	.....	.....	.....	4,000
Golden Fleece...	Colo..	1	.....	.....	.....	.....	.....	.....	.27	.....	.27	.....	.....	.....	800
Hale & Norcross	Nev...	3	.20	.....	.....	.....	.....	.....	.19	.....	.....	.....	.....	.....	300
Horn Silver.	Utah..	20	1.20	.....	.....	.....	.....	.....	1.17	.....	.....	.....	.....	.....	150
Iron Silver.....	Colo..	20	.....	.....	.....	.....	.....	.....	.....	.....	.68	.....	.....	.....	100
Isabella.....	Colo..	1	.70	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	600
Jack Pot.....	Colo..	1	.....	.....	.....	.....	.....	.....	.....	.....	.64	.....	.....	.....	300
Leadville.....	Colo..	10	.....	.....	.....	.....	.07	.....	.....	.....	.....	.....	.....	.....	2.0
Little Chief....	Colo..	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mexican.....	Nev..	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mollie Gibson...	Colo..	5	.....	.....	.....	.....	.21	.....	.....	.....	.21	.....	.....	.....	300
Mt. Rosa.....	Colo..	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ontario.....	Utah..	100	7.00	.....	.....	.....	6.25	.....	6.50	.....	.....	.....	.....	.....	500
Ophir	Nev ..	3	.65	.....	.....	.....	.69	.....	.....	.....	.....	.....	.....	.....	600
Pharmacist.....	Colo..	1	.....	.....	.....	.....	.10	.....	.11	.....	.....	.....	.....	.....	3,000
Phoenix.....	Ariz..	1	.....	.....	.....	.....	.....	.....	.11	.10	.09	.....	.....	.....	1,100
Quicksilver, pf ..	Cal ...	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Savage.....	Nev ..	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sierra Nevada...	Nev ..	3	.....	.....	.....	.....	.20	.....	.20	.....	.....	.....	.....	.....	400
Small Hopes....	Colo..	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Standard Con....	Cal...	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tenn. Copper....	Tenn..	25	17.25	16.50	.....	.....	17.25	16.50	17.25	16.50	16.75	15.50	17.50	17.00	.....
Union Copper...	N. C..	10	4.25	4.00	.....	.....	4.50	4.00	4.13	3.88	4.25	4.00	4.50	4.00	2,000
Work.....	Colo..	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Yellow Jacket...	Nev ..	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

COAL AND INDUSTRIAL STOCKS.

Am. Sm. & Ref..	.....	$100	59⅞	59¼	.....	.....	59⅝	59⅛	61⅞	58⅜	63¼	61¼	61⅝	.....	31,840
" " " " pf	.....	100	99½	97⅞	.....	.....	99⅜	98¾	99⅞	97¾	99⅛	99	99⅛	.....	2,715
Am. S. & W. Con	.....	100	43⅛	44	.....	.....	47¾	46	49⅛	47	52⅜	50	50¾	.....	406449
" " " pf'r n	.....	100	88	.....	.....	.....	91	89	93⅛	90¾	95	92⅞	93⅛	.....	15,850
Col. Fuel & I....	Colo..	100	48	46	.....	.....	49	47¾	48⅝	47¾	51	49⅛	46¾	.....	84,300
Col. & H. C. & I.	"	100	.....	.....	.....	.....	.....	.....	.....	.....	.7	16¾	17½	.....	1200
Federal Steel....	.....	100	46	43½	.....	.....	47¼	45¾	51⅜	47	54⅜	51¾	51⅞	.....	319255
" " pf..	.....	100	74	72⅝	.....	.....	82	81	77⅞	75¾	82	79	80¾	.....	36,360
Fleming'n C. & C	W.Va.	100	23	17	.....	.....	18	17	18	17	18	17	23	20	.....
*Mong. R. Coal..	Pa....	100	10⅝	.....	.....	.....	10⅝	10¾	11	10¾	.....	.....	.....	.....	800
" " " pf.	"	100	43	42½	.....	.....	43	42⅞	43	42¾	.....	.....	.....	.....	60
National Lead..	.....	100	17¾	17	.....	.....	18¾	18	18⅞	18¾	19	18½	.....	.....	2,100
" " pf.	.....	100	.....	.....	.....	.....	89¾	88¾	.....	.....	88½	.....	89½	.....	1,310
National Salt....	.....	100	43	41⅜	.....	.....	43	41¾	42¾	41½	42⅜	41¾	42	.....	8,612
" " pf.	.....	100	77	76½	.....	.....	75	.....	75⅛	74⅜	75	74¾	75¼	.....	165
Pittsburg Coal..	Pa....	100	29⅜	28½	.....	.....	28½	28	28⅛	28½	.....	.....	.....	.....	2,330
" " " pf.	"	100	87½	87½	.....	.....	87½	87½	87½	87⅜	.....	.....	.....	.....	1,517
Republic I. & S..	.....	100	15¼	14⅝	.....	13¼	15⅜	15	15⅜	15¼	17¼	16¼	15⅜	.....	24 145
" " " pf.	.....	100	59¼	58	.....	.....	60⅜	59⅜	60¼	60	64½	62½	62	.....	7,485
Sloss-Shef.....	.....	100	.....	.....	.....	.....	20	.....	19¾	19½	21	20⅜	21	.....	1,100
" " pf.....	.....	100	.....	.....	.....	.....	68	67¾	.....	.....	69	68½	70	.....	300
Stan. Oil.....	.....	100	737	733	.....	.....	810	803	813	810	818	810	818	815	400
Tenn C., L.&R.R.	.....	100	62¾	59	.....	.....	65¼	62¼	67¾	65½	67¾	66	63¾	.....	61,750
Va. Coal & C.....	Va....	100	4½	3½	.....	.....	4½	3⅝	.....	.....	3	2	.....	.....	500

*On Pittsburg, Pa., Exchange. Total sales, 1,085,358.

SAN FRANCISCO, CAL.

NAME OF COMPANY.	Location.	Par value.	Jan. 31	Feb. 1.	Feb. 2.	Feb. 4.	Feb. 5.	Feb. 6.
Belcher	Nev.	$3.00	....	....	....	.17	.18	.17
Best & Belcher	"	3.00	.26	.27	....	.26	.27	.26
Caledonia	"	3.00	.66	.66	....	....	.65	.67
Challenge Con	"	3.00	.15	.17	....	.17	.16	.15
Chollar	"	3.00	.10	.11	....	.11	.12	.11
Confidence	"	3.00	.71	.70	....	.70	.70	.70
Con. California & Virginia	"	2.50	1.55	1.60	....	1.60	1.60	1.50
Crown Point	"	3.00	.13	.13	....	.15	.15	.14
Gould & Curry	"	3.00	.37	.37	....	.38	.40	.39
Hale & Norcross	"	3.00	.17	.19	....	.18	.18	.19
Justice	"	2.00	.07	.07	....	.07	.07	.06
Mexican	"	3.00	.27	.27	....	.28	.28	.26
Occidental Con	"	3.00	.06	.06	....	.06	.06	.06
Ophir	"	3.00	.62	.65	....	.71	.75	.71
Potosi	"	3.00	.09	.08	....	.09	.09	.08
Savage	"	2.50	.16	.16	....	.17	.16	.16
Sierra Nevada	"	3.00	.18	.18	....	.17	.17	.17
Standard Con	Cal.	10.00	4.10	4.00	....	4.10	4.40	4.20
Union Con	Nev.	2.50	.24	.25	....	.26	.26	.23
Utah Con	"	1.00	.08	.07	....	.07	.07	.07
Yellow Jacket	"	3.00	.14	.15	....	.14	.14	.13

CALIFORNIA OIL STOCKS.*

Name of Company.	No. of shares.	Par Val.	Jan. 21. H.	Jan. 21. L.	Jan. 22. H.	Jan. 22. L.	Jan. 23. H.	Jan. 23. L.	Jan. 24. H.	Jan. 24. L.	Jan. 25. H.	Jan. 25. L.	Jan. 26. H.	Jan. 26. L.	Sales
Blue Goose...	5,000	$100	.....	.....	.....	.....	.....	.....	3.00	1.00	.....	.....	.....	.....	.....
Buckhorn.....	20,000	10.00	3.50	.....	3.50	.....	3.00	.....	3.50	2.90	.....	.....	.....	.....	.....
Cal. Standard.	500,000	1.00	.39	.38	.39	.37	.39	.37	.38	.37	.....	.....	.....	.....	3,800
Caribou.....	100,000	1.00	.60	.53	.55	.50	.54	.52	.54	.52	.....	.....	.....	.....	1,200
El Dorado.....	100,000	1.00	2.00	1.75	2.00	1.80	1.90	1.75	1.80	1.50	.....	.....	.....	.....	800
Four.....	300,000	1.00	.58	.56	.57	.56	.56	.55	.56	.55	.....	.....	.....	.....	4,354
Hanford.....	2,000	10.00	122	118	118	115	119	117	120	115	.....	.....	.....	.....	24
Hanf'd F. & K.	150,000	1.00	.43	.40	.42	.38	.39	.35	.35	.....	.....	.....	.....	.....	.....
Home.....	100,000	1.00	4.15	4.05	4.15	4.05	4.15	4.05	4.15	4.10	.....	.....	.....	.....	600
Homestake....	10,000	10.00	11.50	11.13	10.65	10.50	10.63	.....	10.63	10.50	.....	.....	.....	.....	.....
Independence.	600,000	1.00	.22	.21	.23	.20	.21	.20	.21	.20	.....	.....	.....	.....	4,400
Kern.....	100,000	1.00	11.63	11.50	12.38	11.25	12.50	12.00	12.25	11.85	.....	.....	.....	.....	1,695
Kern River....	20,000	5.00	17.00	16.25	16.75	16.50	17.00	16.00	16.75	15.50	.....	.....	.....	.....	75
McKittrick....	60,000	1.00	.37	.35	.....	.....	.....	.....	.36	.33	.....	.....	.....	.....	67
Mo'arch of Ari	500,000	1.00	.79	.70	.75	.72	.88	.76	.86	.83	.....	.....	.....	.....	15,908
Monte Cristo..	500,000	1.00	2.25	2.15	2.20	2.15	2.35	2.20	2.20	2.25	.....	.....	.....	.....	1,800
Oil City Petrol	5,000	100.	35.00	34.00	35.50	34.00	35.00	33.00	34.50	33.00	.....	.....	.....	.....	8
Petrol. Center.	500,000	1.00	.23	.21	.27	.24	.28	.25	.25	.24	.....	.....	.....	.....	43,005
Queen Esther..	100,000	1.00	.60	.....	.60	.....	.60	.....	.60	.....	.....	.....	.....	.....	.....
San Joaquin..	100,000	1.00	13.00	12.00	12.50	12.25	12.25	11.75	12.50	11.50	.....	.....	.....	.....	950
Sterling.....	250,000	1.00	3.45	3.25	3.50	3.25	3.50	3.35	3.45	3.25	.....	.....	.....	.....	2,850
Sunset (Orig.)	100,000	5.00	.45	.....	.45	.38	.41	.40	.....	.....	.....	.....	.....	.....	.....
Twenty-eight..	60,000	10.00	2.35	2.30	2.38	2.30	2.33	2.30	2.33	2.30	.....	.....	.....	.....	1,164
Yukon.....	100,000	2.50	.57	.55	.62	.56	.59	.53	.58	.53	.....	.....	.....	.....	1,400

* Producers' Oil Exchange, San Francisco. Total sales, 89,220 shares.

ST. LOUIS, MO.*

NAME.	Location.	Share capital.	Par val.	Feb. 6. Bid.	Feb. 6. Ask.	NAME.	Location	Share capital.	Par val.	Feb. 6. Bid.	Feb. 6. Ask.
Am.-Nettie	Colo.	800,000	$10	$1.20	$1.25	Doe Run Lead.....	Mo	10,000	$100	$125.00	$130.00
Catherine Lead.	Mo ..	50,000	10	5.50	6.50	Granite Bimetallic	Mt	1000,000	10	2.75	2.30
Central Lead. ..	Mo ..	10,000	100	130.00	132.50	Kan. & Tex. Coal..	Mo	25,000	100	53.00	55.00
Columbia Lead.	Mo ..	50,000	10	12.00	14.00	Renault Lead.....	Mo	80,000	10	11.00	12.00
Con. Coal.....	Ill. ..	30.0.0	100	12.00	12.25	St. Joe Lead.....	Mo	800,000	10	14.25	15.00

* From our special correspondent.

BOSTON, MASS.†

NAME OF COMPANY.	Par val.	Shares issued.	Jan. 31. H.	Jan. 31. L.	Feb. 1. H.	Feb. 1. L.	Feb. 2. H.	Feb. 2. L.	Feb. 4. H.	Feb. 4. L.	Feb. 5. H.	Feb. 5. L.	Feb. 6. H.	Feb. 6. L.	Sales.
Adventure Con..	$25	100,000	9.38	9.63	9.88	.....	.....	.....	10.38	10.00	10.00	.....	10.25	10.00	1,398
Aetna Con.....	5	100,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Allouez.....	25	90,000	2.75	.....	.....	.....	.....	.....	2.63	.....	2.63	.....	.....	.....	175
Amal. Copper...	100	750,000	90.00	89.25	91.50	89.75	.....	.....	92.00	89.75	91.00	90.00	91.00	90.25	12,674
Anaconda.....	25	1200,000	.....	.....	44.00	43.13	.....	.....	44.50	44.25	.....	.....	.....	.....	156
Arcadian, c.....	25	150,000	17.50	.....	18.00	.....	.....	.....	19.00	.....	.....	.....	19.00	.....	125
Arnold.....	25	60,000	.....	.....	4.00	.....	.....	.....	.....	.....	.....	.....	4.00	3.50	115
Ash Bed.....	25	40,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Atlantic, c.....	25	40,000	.....	.....	26.00	25.50	.....	.....	26.00	27.75	26.00	.....	27.00	.....	40
Baltic, c.....	25	100,000	.....	.....	34.50	34.00	.....	.....	34.38	34.25	34.38	.....	37.00	34.75	4,235
Bingham, c. g....	10	190,000	16.00	.....	17.00	16.00	.....	.....	18.25	17.00	18.50	18.00	19.00	18.25	4,478
Bonanza Dev.....	10	800,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.00	.....	10
Boston.....	10	100,000	.....	.....	6.00	5.88	.....	.....	6.25	.....	7.00	6.50	7.00	.....	1,075
Boston & Mont..	25	150,000	315	314	315	312	.....	.....	320	315	319	316	319	318	494
British Columbia	5	200,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Butte & Bost., c.	10	200,000	79.00	77.00	81.50	78.50	.....	.....	82.00	80.00	83.00	80.00	81.00	80.00	7,905
Cal. & Hecla, c..	25	100,000	845	.....	845	842	.....	.....	848	842	850	848	850	848	78
Catalpa.....	10	900,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Centennial, c....	25	90,000	22.00	.....	22.88	22.38	.....	.....	23.25	23.00	23.00	22.50	23.00	22.50	2,620
Cent'l-Eureka....	25	100,000	24.00	.....	24.00	.....	.....	.....	24.00	.....	25.00	24.50	24.00	.....	525
Cochiti, g.....	10	175,000	10.00	9.75	9.75	.....	.....	.....	10.50	10.25	10.00	.....	9.75	9.50	1,244
Copper Range ...	25	100,000	37.25	37.00	38.00	37.50	.....	.....	39.00	38.00	40.00	38.75	42.25	39.00	7,353
Crescent.....	10	800,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Daly-West.....	20	150,000	30.50	.....	.....	.....	.....	.....	30.25	.....	30.50	.....	30.25	.....	180
Dominion Coal..	100	150,000	84.13	.....	84.75	84.50	.....	.....	85.00	.....	86.00	85.00	87.25	86.25	4,209
do. pref.....	100	80,000	103½	.....	.....	.....	.....	.....	103½	109	110	109½	110	.....	37
Elm River.....	12	100,000	.....	.....	.....	.....	.....	.....	5.00	4.75	4.75	4.50	4.50	.....	1,255
Franklin, c.....	25	100,000	.....	.....	17.00	16.75	.....	.....	18.00	17.00	18.00	17.50	18.25	18.00	1,449
Humboldt.....	25	40,000	.25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
I. Royal Con., c..	25	100,000	38.50	37.75	38.00	.....	.....	.....	39.00	38.00	39.00	38.00	39.00	38.25	2,975
Mass Con.....	25	100,000	.....	.....	12.25	12.00	.....	.....	12.50	12.00	.....	.....	.....	.....	420
Mayflower.....	25	100,000	1.88	.....	.....	.....	.....	.....	1 88	.....	.....	.....	.....	.....	50
Melones.....	10	157,577	1.13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	200
Merced.....	15	100,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Michigan.....	25	100,000	.....	.....	.....	.....	.....	.....	.....	.....	5.75	.....	5.75	.....	150
Mohawk, c.....	25	100,000	23.00	.....	23.75	23.50	.....	.....	24.00	23.25	.....	.....	23.75	23.00	1,085
Mont. C. & C....	25	200,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6.50	6.25	100
N. A. G. Dreg....	10	100,000	.....	.....	.....	.....	.....	.....	.75	.....	.75	.....	.....	.....	150
N.E. Gas & Coke	100	160,000	.....	.....	11.75	11.50	.....	.....	12.00	.....	13.00	12.50	13.50	13.38	905
Old Colony.....	25	100,000	.....	.....	.....	.....	.....	.....	3.25	.....	.....	.....	.....	.....	100
Old Dominion, c	25	150,000	31.00	30.13	31.25	30.00	.....	.....	31.75	31.25	32.01	31.50	32.75	31.75	9,635
Osceola, c.....	25	93,000	82.25	82.00	83.50	81.00	.....	.....	84.00	83.00	84.00	83.75	84.00	83.25	888
Parrot, s c.....	10	229,350	48.00	47.50	48.00	47.50	.....	.....	48.13	48.00	48.50	48.00	48.13	48.00	1,787
Quincy, c.....	25	100,000	165	.....	167	165	.....	.....	168	.....	168½	168	170	168	168
Rhode Island....	25	100,000	4.00	.....	.....	.....	.....	.....	4.50	.....	5.00	4.63	.....	.....	1,175
Santa Fe, g. c...	10	250,000	5.00	.....	.....	.....	.....	.....	6.50	.....	6.25	.....	.....	.....	1,000
Santa Ysabel....	5	130,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tamarack, c.....	25	60,000	.....	.....	330	.....	.....	.....	.....	.....	335	330	332	330	49
Tecumseh.....	25	50,000	.....	.....	.....	1.88	1.75	.....	.....	.....	.....	.....	2.00	.....	440
Trimountain....	25	100,000	21.00	20.50	21.00	20.75	.....	.....	21.50	21.25	21.50	21.38	21.75	21.25	1,490
Union C. L.....	25	80 000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
UnitedStatesMg.	25	250,000	9.50	.....	9.75	.....	.....	.....	.....	.....	10.63	10.00	11.00	10.50	6,320
Utah Con., g. c..	5	900,000	32.75	31.75	33.00	32.50	.....	.....	33.25	33.00	33.25	32.00	33.00	32.75	2,615
Victor, g.....	5	200,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Victoria.....	25	100,000	.....	.....	.....	.....	.....	.....	3.93	3.88	3.88	.....	.....	.....	110
Washington.....	25	60,000	.75	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50
Winona, c.....	25	100,000	5.25	5.00	.....	.....	.....	.....	5.50	.....	5.50	.....	6.25	5.50	2,135
Wolverine c....	25	60,000	48.63	.....	49.25	49.00	.....	.....	49.63	49.25	49.50	49.25	49.75	49.00	925
Wyandot.....	25	100,000	.....	.....	1.63	1.50	.....	.....	1.75	1.50	.....	.....	1.75	.....	400

†Official quotations Boston Stock Exchange. Total sales, 87,251 shares.

PHILADELPHIA, PA.§

NAME OF COMPANY.	L'cation.	Par Val.	Jan. 31. H.	Jan. 31. L.	Feb. 1. H.	Feb. 1. L.	Feb. 2. H.	Feb. 2. L.	Feb. 4. H.	Feb. 4. L.	Feb. 5. H.	Feb. 5. L.	Feb. 6. H.	Feb. 6. L.	Sales
Am. Alkali.....	.....	$50	.....	.....	2.13	.....	.....	.....	2.13	.....	.....	.....	2.00	.....	730
Am. Cement.....	.....	10	7.50	.....	7.50	.....	.....	.....	.....	.....	7.50	.....	.....	.....	415
Bethlehem Iron.	Pa.	50	61.00	60.50	60.50	60.38	.....	.....	61.00	60.75	61.50	61.00	61.00	60.75	1,492
Bethlehem Steel	"	50	.....	.....	18.00	.....	.....	.....	19.00	.....	19.00	.....	19.00	.....	658
Cambria Iron...	"	50	45.25	.....	.....	.....	.....	.....	.....	.....	.....	.....	46.00	45.75	312
†Cambria Steel..	"	50	17.13	16.63	17.25	16.63	.....	.....	17.75	17.50	17.88	17.63	18.13	18.00	7,740
Susq. I. & S.....	"	10	.....	.....	2.25	.....	.....	.....	2.38	.....	2.38	.....	2.38	.....	1,665
United Gas I....	"	50	123⅞	123	123	.....	.....	.....	122¾	122½	122½	.....	123½	123	760

Total shares sold, 13,777. §Reported by Townsend, Whelen & Co., 309 Walnut St., Philadelphia.

SALT LAKE CITY, UTAH. Feb. 2

STOCKS.	Shares.	Par val.	Bid.	Asked.	STOCKS.	Shares.	Par val.	Bid.	Asked.
Ajax.....	300,000	$10	$0.32½	$0.33½	Horn Silver.....	400,000	$25	$1.10	.....
Albion.....	.....	.....	.20	.60	Joe Bowers.....	400,000	1	.01½	$.01⅝
Alice.....	400,000	25	.37½	.55	Lower Mammoth.	150,000	1	.....	3.93
Anchor.....	.....	.....	.....	.....	Mammoth	400,000	5	2.15	2.16
Bullion-Beck & Ch..	100,000	10	.....	4.25	May Day.....	400,000	⅝	.43⅜	.43¾
Centennial Eureka..	200,000	25	3.25	.....	Northern Light ..	400,000	5	.02½	.....
Cons. Mercur.....	1,000,000	5	3.11½	3.15	Ontario.....	150,000	100	7.17	7.44
Daisy.....	500,000	5	.....	.....	Rocco-H'st'k-Nev.	.....	.....	1.01	1 01½
Dalton.....	500,000	5	.08	.....	Sacramento.....	1,000,000	5	.38¼	.38⅜
Dalton & Lark.....	2,500,000	1	.02	.05	Showers Cons....	400,000	5	.....	.20
Daly.....	150,000	20	1.50	1.50	Silver King.....	150,000	20	73.00	75.00
Daly-West.....	150,000	20	30.22½	30.35	Silver Shield....	.....	.....	.24½	.25¼
Dexter.....	200,000	5	1.15	1.19	Star Consolidated	500,000	1	.84⅜	.84⅝
Eagle & Blue Bell..	250,000	1	.33	.36	Sunbeam.....	250,000	1	.38	.45
Four Aces.....	250,000	1	.02	.....	Sw

STOCK QUOTATIONS.

COLORADO SPRINGS, COLO.*

Name of Company.	Par val.	Jan. 26. B.	Jan. 26. A.	Jan. 28. B.	Jan. 28. A.	Jan. 29. B.	Jan. 29. A.	Jan. 30. B.	Jan. 30. A.	Jan. 31. B.	Jan. 31. A.	Feb. 1. B.	Feb. 1. A.	Sales.
Acacia	$1	.24½	.26	.25¼	.25½	.25	.25½	.....	.25⅝	.28⅞	.29½	.23	.29¼	55,900
Alamo	1	.11⅝	.12	.12	.12¾	.12¼	.....	.12⅜	.12⅝	.12⅝	.12¾	12¼	.18	47,000
Am. Con	1	.....	.....	.06⅜	.06⅝	.06¼	.06¾	.06	.07	.06¼	.06½	.....	.....	9,500
Anaconda	1	.47¾	.48¾	.48	.49	.43	.47	.45	.45½	.44	.44½	.42⅞	.48	26,000
Anchor	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Anchoria L	1	.....	1.00	.....	1.00	.....	1.00	.....	1.00	.....	1.00	.....	1.00	.....
Antelope	1	.02¼	.02¾	.02¼	.02¾	.02¼	.02¾	.02⅜	.02¾	.02¼	.02¾	.02¼	.02⅜	1,000
Aola	1	.04¾	.05	.04⅞	.....	.04¾	.05¼	.04½	.05	.5	.....	.05	.05½	4,000
Arcadian	1	.04½	.04⅝	.04½	.....	.04½	.....	.04½	.....	.04½	.04⅝	.04½	.05	1,000
Arg'utum J	1	.23	.....	.23	.30	.23⅜	.29	.23	.23¾	.28	.23¾	.28	.23¾	3,400
Banner	1	.02	.03⅛	.03½	.03½	.03	.03⅛	.03	.03⅛	.03	.03⅜	.03	.03¼	5,000
Battle Mt.C	1	.24	.25	.24½	.24¾	.24½	.25	.24	.24½	.24	.25	.....	.24¾	12,600
Ben Hur	1	.08	.08½	.08¼	.09¼	.07⅜	.....	.....	.....	.....	.08¼	.....	.09½	7,000
Black Bell	1	.10½	.11¾	.10½	.11	.10⅜	.....	.10¾	.12	.10½	.....	.10½	.....	2,000
Blue Bell	1	.15	.15¼	.16	.16½	.16½	.16¾	.16½	.16⅝	.16⅜	.17	.16⅛	.17	70,300
Bob Lee	1	.06⅜	.06⅝	.06½	.06¾	.06⅝	.06¾	.06½	.06⅝	.06¼	.06½	.....	.06⅜	22,500
Buckhorn	1	.05¾	.06¼	.05¾	.06½	.05⅞	.06⅛	.....	.06¼	.05¾	.06¼	.....	.06¼	.....
Cadillac	1	.02	.02¼	.02⅜	.02⅛	.02⅜	.02⅝	.02⅜	.02½	.02⅛	.02⅜	.02⅛	.02½	.....
Central C'n	1	.06⅛	.06¼	.05½	.05⅞	.05½	.06	.05⅜	.05¾	.05⅜	.....	.05⅞	.06⅜	9,000
Champion	1	.06	.06¼	.06⅛	.....	.06	.06½	.06	.06¼	.06	.06½	.06	.06½	2,000
Chicolo	1	.02¼	.02⅜	.02⅛	.02⅜	.02¼	.....	.03⅜	.02¾	.02⅛	.....	.02⅜	.02⅝	13,000
C. K. & N	1	.02⅜	.03	.02¾	.03	.02⅝	.02⅞	.....	.02⅝	.02⅜	.02¾	.02⅜	.02⅝	10,000
C. C.Col'nia	1	.11	.11⅜	.11	.11¾	.10¾	.11	.....	.11	.11½	.11¼	.11½	.11¾	25,000
C. C. G. Ext	1	.13	.14	.13	.14	.....	.14	.12	.13⅜	.12½	.13¼	.....	.13½	2,000
C. C. & Man	1	.08⅜	.09	.08⅞	.03½	.09	.09½	.....	.....	.08	.09¾	.....	.09	29,000
Copper Mt.	1	.03⅝	.03¾	.03¼	.04	.03⅝	.03¾	.03½	.03⅝	.03¼	.03¾	.03¾	.04	10,000
Creede& CC	1	.....	.....	.08	.....	.....	.....	.08	.12	.....	.....	.....	.....	.....
C. C. Con	1	.10	.10½	.10	.11	.10¼	.10¾	.10½	.10⅝	.10½	.10⅞	.10⅜	.10½	16,000
Dante	1	.03⅜	.09	.03⅝	.03⅞	.03⅝	.03⅞	.03⅝	.03¾	.03⅛	.03⅝	.03⅝	.03⅝	8,000
Des Moines	1	.05¾	.06	.05¾	.06	.05⅝	.06	.05½	.....	.05⅝	.05⅞	.05⅝	.05¼	4,000
Eclipse	1	.03¼	.03½	.03¼	.04⅛	.03¾	.....	.03⅝	.03⅞	.09	.09½	.09⅛	.10	4,000
Elkton Con	1	1.38	1.39	1.37½	1.38¾	1.38	1.90	1.39½	1.90	1.90	1.91	1.91	.....	10,630
El Paso G	1	.52	.52	.54	.55	.54	.55	.53½	.54½	.53⅛	.54	.51¾	.55	12,000
Enterprise	1	.12½	.14	.....	.15	.13½	.15	.12½	.....	.14	.15	.13½	.15	5,000
F. Rawlings	1	.....	.18	.....	.18	.....	.....	.....	.....	.....	.....	.....	.....	.....
Findley	1	.10¾	.11⅜	.11¼	.11⅞	.11	.11¾	.11	.11¾	.11¼	.12	.11⅛	.12	6,000
Garf. Conn.	1	.07½	.....	.07½	.....	.07½	.....	.07½	.....	.07½	.....	.07½	.....	.....
Golden Fl	1	.28	.30	.27	.30	.26	.30	.....	.30	.....	.30	.....	.30	1,000
Gold Hill	1	.02¾	.03	.02⅝	.03	.04½	.04⅝	.02¾	.03	.02¾	.03	.0.5⅝	.02⅞	2,000
Gold Sov'n	1	.06¾	.06⅞	.06½	.07	.06½	.07	.07¼	.07½	.08	.03½	.06⅝	.03¾	4 ,000
Hayden	1	.01½	.02	.....	.02	.01¾	.02	.....	.02	.....	.02	.....	.02	1,000
Humboldt	1	.....	.....	.03	.....	.03	.03¼	.03	.03⅜	.02⅞	.03⅜	.03	.03¼	11,000
Ida May	1	.23	.....	.....	.24	.23	.24	.23	.24	.22½	.23½	.20	.24	3,000
Ing. Con	½	.....	.20	.....	.20	.18½	.19⅞	.....	.20	.....	.20	.....	.20	.....
Ironclad	1	.05½	.05⅞	.05⅜	.06	.05¾	.05½	.05¼	.05⅞	.05⅜	.06¼	.06	.06½	9,000
Isabella	1	.67½	.68	.65	.68¼	.65½	.66⅜	.67½	.68	.68¾	.69¼	.63¾	.63¾	40,300
Jack Pot	1	.58	.60	.56	.59	.56½	.58	.62	.60	.61½	.60	.63	.63	19,700
Josephine	1	.01⅜	.02	.01⅜	.02	.01½	.02	.01⅜	.02	.01⅜	.02	.01⅝	.02	8,000
Key West	1	.02⅜	.02¾	.02⅝	.03	.02¼	.02¾	.02½	.02¾	.02⅜	.02¾	.02½	.02¾	11,000
Lexington	1	.10¼	.10¾	.10½	.10⅞	.10½	.....	.10½	.10⅝	.10½	.....	.10⅝	.11	19,300
Magnet R.	1	.08	.08⅜	.03	.03¼	.03	.04½	.03	.03¼	.03	.0 ¼	.03½	.03⅜	13,000
Margaret	1	.02¾	.03	.02¾	.03	.02¾	.03	.....	.02¾	.02½	.02¾	.02½	.02¾	6,000
Margery	1	.02¼	.02⅜	.02⅜	.02⅝	.02⅜	.02&	.....	.02⅝	.....	.02¾	.02¼	.02¾	27,500
Matoa	1	.15	.18	15	.17	.....	.18	.....	.....	.15	.18	.15	.18	.....
Midway	1	.04¼	.04¾	.04	.04⅜	.....	.....	.04½	.04⅜	.04	.04¾	.04½	.04⅜	5,300
M. J. T	1	.04⅜	.04⅝	.03⅞	.04⅜	.04	.....	.....	.04	.....	.04	.03½	.03⅝	4,000
Mobile	1	.03¼	.04	.03⅝	.04	.....	.04	.....	.04	.03¾	.04	.03⅝	.04	33,000
Moll.Dwyer	1	.06¾	.06⅞	.06¾	.07	.06¾	.06⅞	.06¾	.06⅞	.06¾	.07	.06¼	.07	95,000
Mollie Gib.	1	.21	.24	.21	.24	.21	.25	.20	.....	.21	.....	.22	.24	.....
Monarch	1	.03½	.....	.....	.03¾	.03	.03¾	.03	.03¼	.07½	.03	.07½	.08	1,000
Montreal	1	.04	.05	.04	.05	.04	.05	.05	.....	.04	.....	.04	.....	2,000
Moon-A'c'r	1	.22	.30	.23	.....	.23	.29	.23	.30	.22	.....	.22	.30	200
Morning S	1	.03⅞	.04	.03¾	.04	.....	.04	.....	.04	.03½	.04	.03¾	.03⅞	2,000
Mtn.Beauty	1	.08	.08¼	.08	.03½	.08	.08¼	.08	.03½	.....	.03	.07½	.03	18,000
Mt. Rosa	1	.40	.....	.40	.....	.41	.....	.40	.....	.41	.....	.41	.....	.....
National	1	.10⅜	.10⅝	.10¼	.10⅜	.09⅝	.10	.10¾	.10⅞	.10⅝	.10⅞	.10¼	.10¾	80,500
Nellie V	1	.05¾	.07	.06¾	.07	.06¾	.06⅞	.06¾	.07	.06¾	.06⅞	.06¾	.07	5,000
New Haven	1	.07⅞	.08¼	.08½	.09¾	.09	.09¾	.09	.09¼	.09¼	.09⅝	.09	.09	107,100
Olive B'nch	1	.04	.04¼	.03⅝	.04	.03¾	.04	.04	.04⅛	.04	.04¼	.04	.04⅛	26,000
Ophir	1	.31	.....	.31	.40	.31½	.....	.31	.35	.31	.....	.33	.....	.....
Oriole	1	.03½	.04	.03⅝	.04	.03½	.....	.03½	.....	.03¼	.04	.03¾	.04	1,000
Orphan	1	.15	.30	.23	.....	.16	.17	.16	.16½	.16	.....	.16	.17	7,000
Pelican	1	.01⅞	.02	.01⅜	.02	.....	.02	.....	.02	.....	.02	.01¾	.02	5,000
Pharmacist	1	.07¾	.07⅞	.08	.08½	.03¼	.08⅜	.03½	.09¼	.10½	.10½	.10⅜	.10½	60,500
Pilgrim	1	.10	.10½	.10	.10¼	.10	.10½	.10¼	.10½	.10½	.10½	.10¾	.10¾	8,000
Pinnacle	1	.15	.17⅞	.15¼	.17	.17	.17¾	.17¼	.18	.17½	.18	.21¾	.21⅞	39,000
Portland	1	3.23½	3.26	3.23	3.25	3.22	3.25	3.23	3.25	.....	3.25	3.25	3.25	4,400
Prince Alb.	1	.05¾	.06	.05⅜	.05⅞	.05½	.05⅝	.05¼	.05½	.05⅜	.05⅝	.05¾	.06	35,000
Princess	1	.04⅜	.05	.05	.05¼	.05⅛	.05⅜	.05¼	.05½	.04¾	.05¼	.05¼	.06	6,000
Progress	1	.05½	.05⅞	.07	.07¾	.....	.....	.06¾	.07	.06⅛	.07	.06½	.07	94,000
Pythias	1	.04	.04¼	.04	.04¾	.....	.....	.04	.04¾	.04	.04½	.04	.04½	.....
Republic	1	.08¼	.08⅜	.03½	.08¼	.08	.08⅝	.08¾	.08¾	.08¾	.08¾	.08¼	.08¾	139,000
Rob't Burns	1	.04½	.04¾	.04	.....	.04⅛	.04⅜	.04½	.04⅝	.....	.04¾	.04½	.04¾	16,000
Rose Maud	1	.06⅛	.07	.06⅞	.07	.06¾	.07	.07	.07⅛	.06⅞	.07	.06⅞	.07	19,000
Rose Nicol	1	.10¼	.10⅝	.10⅜	.10¾	.10⅝	.11	.10⅝	.10⅞	.10¼	.10⅜	.10⅜	.10⅝	17,000
Sliver Gold	1	.01½	.....	.01½	.....	.01¾	.02	.01¾	.02	.01¾	.02	.01¾	.02	1,000
Theresa	1	.....	.....	.07	.07¼	.....	.....	.....	.07½	.07	.07⅛	.07⅛	.07⅜	2,000
Trachyte	1	.06⅞	.07⅛	.06⅞	.07	.06⅞	.07⅛	.06⅞	.07⅛	.06⅞	.07⅛	.06⅞	.07⅛	12,000
Uncle Sam	1	.03½	.04⅛	.03¾	.03¾	.03⅝	.04	.04	.....	.04⅛	.....	.04¼	.....	22,000
Union	1	.09	.12	.09	.12	.09	.12	.09	.12	.....	.12	.....	.12	.....
Va. M	1	.07	.....	.07	.....	.08½	.09	.08	.09	.07	.....	.08	.....	2,100
Vindicator	1	.....	.....	.....	1.30	.....	1.35	.....	1.35	.....	1.32	.....	1.32	.....
Work	1	.19	.19¼	.18	.19½	.18	.19	.18⅝	.19	.19	.19⅛	.18¾	.19	25,000
Zenobia	1	.10¼	.....	.10¾	.....	.10¼	.....	.10¾	.....	.10⅛	.....	.10¾	.....	.....

Colorado Springs Mining Stock Exchange. Total sales, 1,483,130 shares.

MONTREAL, CANADA.*

Name of Company.	Par val.	Week Feb. 4. H.	Week Feb. 4. L.	Sales.	Name of Company.	Par val.	Week, Feb. 4. H.	Week, Feb. 4. L.	Sales.
Big Three	$1	.02½	.01	5,000	Montreal G. F	$1	.03½	.....	.....
California	1	.05	.04	4 000	Montreal-London	0.24	.04½	.04¼	10,500
Can. Gold Fields	0.10	.06½	.06⅛	3,000	Okanogan	.....	.....	.....	.....
Decca	1	.03½	.....	.....	Oregon	1	.16¾	.....	1,500
Deer Trail Con	1	.03½	.02¼	.....	Payne	1	.54	.49	1,000
Evening Star	1	.07	.08	.....	Rambler-Cariboo	1	.40	.25¾	.....
Golden Star	1	.05	.01½	.....	Republic Con	1	.46	.45	3,000
Gold Hills Dev	1	.04½	.02½	.....	Slocan-Sovereign	1	.03⅛	.03⅛	.....
Knob Hill	1	.57	.42	.....	Virtue	1	.32	.30	2,500
Monte Christo	1	.32	.....	.....	War Eagle	1	.80½	.50	1,500

* Montreal Stock Exchange. Total sales, 32,000 shares.

MEXICO.

Jan. 25.

Name of Company.	No. of shares.	Last div'd.	Prices. Op'g.	Prices. Cl'g.	Name of Company.	No. of shares.	Last div'd	Prices. Op'g.	Prices. Cl'g.
Durango:					Hidalgo:				
Barradon y Cab	2,400	.....	$20	$15	Real del Monte	2,554	10.00	550	500
Candelaria de Pan	1,200	.....	20	20	San Francisco Hc.	6,000	1.00	115	120
Capuzaya Guan	2,400	.....	15	12	Soledad	960	5.00	270	280
Restauradora	10,000	.....	20	10	Sorpresa	960	7.50	200	230
Guanajuato.					Union Hacienda	2,000	5.00	240	260
Angustias	2,400	5.00	70	45	Mexico:				
Cinco Senores y An.	2,000	15.00	220	235	Coronas	500	.....	75	75
Guadalupe Hacie'a.	10,000	1.00	200	210	Esperanza y An	3,080	10.00	930	900
Trinidad, aviadora	2,000	.....	6	7	Michoacan:				
do. aviada	400	.....	10	7	Luz de Borda ava.	4,000	.....	80	82
Zona Minera de Poz	2,400	.....	6	8	S. Luis Potosi:				
Hidalgo:					Concep. y An	2,400	.....	190	210
Amistad y Concord.	9,600	4.60	35	31	Zacatecas:				
Arevalo	720	.....	200	200	Asturiana y An	2,500	10.00	140	190
Bartolome de Med	2,000	2.00	70	60	Cabezon	2,400	.....	15	10
Carmen	1,100	7.75	150	130	C'delar de Pinos	2,500	.....	140	120
Luz Ca Maravillas	800	.....	100	80	Palma de Somb	2 400	.....	40	80
Pabellon	800	27.89	20	10					

DENVER, COLO.‡

Name of Company.	Par val.	Jan. 28. B.	Jan. 28. A.	Jan. 29. B.	Jan. 29. A.	Jan. 30. B.	Jan. 30. A.	Jan. 31. B.	Jan. 31. A.	Feb. 1. B.	Feb. 1. A.	Feb. 2. B.	Feb. 2. A.	Sales
Acacia	1	.....	.....	.....	.....	.....	.....	.24¼	.24½	.....	.....	.....	.....	2,000
Anaconda	5	.....	.....	.....	.....	.....	.....	.....	.....	.43¼	.43⅝	.....	.....	1,000
Arg. J	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dictator	1	.....	.....	.03½	.03¾	.03⅜	.03½	.03½	.03¾	.04¼	.03⅝	.....	.....	69,000
Gold. Sov'n.	1	.....	.....	.06⅞	.07	.....	.....	.07⅜	.07⅝	.....	.....	.....	.....	7,000
Ironclad	1	.....	.....	.05⅞	.06	.....	.....	.....	.....	.....	.....	.....	.....	11,500
Isabella	1	.....	.....	.65	.66⅜	.67⅝	.....	.69½	.69¼	.68	.....	.....	.....	4,100
Josephine	1	.....	.....	.01¾	.02	.02⅜	.....	.01¾	.02	.02⅛	.....	.....	.....	18,000
Monarch	1	.....	.....	.....	.08	.08½	.....	.07½	.08	.....	.....	.....	.....	7,000
Mt. Beauty	1	.....	.....	.....	.08	.08¼	.....	.....	.....	.....	.....	.....	.....	6,000
National	1	.....	.....	.....	.10¼	.10⅝	.....	.....	.....	.10¾	.11	.....	.....	2,000
New Haven	1	.....	.....	.09	.09⅝	.....	.....	.09½	.09⅝	.09¾	.09	.....	.....	36,100
Reno	1	.....	.....	.....	.....	.....	.....	.09½	.....	.09¾	.....	.....	.....	6,000
Republic	1	.....	.....	.08	.....	.08½	.08⅝	.08⅜	.....	.....	.....	.....	.....	10,000
Work	1	.....	.....	.....	.....	.19¾	.19⅞	.....	.....	.....	.....	.....	.....	1,000

‡ Official Quotations Denver Stock Exchange. Total sales, 180,700 shares.

SPOKANE, WASH.

Week Feb. 1.

Name of Company.	Par val.	B.	A.	Sales.	Name of Company.	Par val.	B.	A.	Sales.
Crystal	....	.04	.04¼	.....	Mountain Lion	$1	.24	.35	.....
Deer Trail Con	$1	.02¾	.03⅛	1,000	Princess Maud	0.10	.01⅞	.02⅜	6,000
Evening Star	1	.04¾	.07	.....	Quilp	1	.2⅜	.25⅛	.....
Gold Ledge	....	.02	.02¾	11,500	Rambler Cariboo	0.25	.30	.31½	5,000
Jim Blaine	1	.....	.....	.....	Reservation	....	.03½	.05¼	1,000
Lone Pine Surp. Con	1	.07	.08	1,000	Sullivan	....	.12⅜	.13½	6,000
Morning Glory	0.10	.06¾	.07¼	.....	Tom Thumb	....	.13½	.14½	.....

PARIS.

Jan. 17.

Name of Company.	Country.	Product.	Capital Stock.	Par value.	Latest divs.	Prices. Opening.	Prices. Closing.
			Francs.	Fr.	Fr.	Fr.	Fr.
Acieries de Creusot	France	Steel mfrs	27,000,000	2,000	85.00	1,790.00	1,800.00
" " Firminy	"	" "	3,000,000	500	175.00	3,800.00	3,345.00
" " Fives-Lille	"	" "	12,000,000	500	.....	465.00	448.00
" " Huta-Bank	Russia	Iron & steel	.....	500	.....	4,250.00	3,540.00
" " la Marine	France	Steel mfrs	20,000,000	500	60.00	1,600.00	1 600.00
Anzin	"	Coal	.....	.....	260.00	6,290.00	6,175.00
Boleo	Lower Cal	Copper	.....	500	176.00	2,700.00	2,700.00
Briansk	Russia	Coal & Iron	.....	500	.....	618.75	522.50
Champ d'Or	S. Africa	Gold	3,375,000	25	3.75	29.00	26.75
Courrieres	France	Coal	600,000	300	90.00	2,565.00	2,535.00
Dombrowa	Russia	"	.....	500	12.50	990.00	99 0.00
Dynamite Centrale	France	Explosives	.....	500	22.50	415.00	420.00
Escombrera-Bleyberg	Spain	Lead	.....	500	70.00	1,150.00	1,140.00
Fraser River	Brit. Col'mb.	Gold	250,000	25	.....	7.25	7.00
Huanchaca	Bolivia	Silver	40,000,000	125	5.00	152.00	153.50
Laurium	Greece	Zinc & lead	16,300,000	500	30.00	485.00	485.00
Malfidano	Italy	Zinc	12,500,000	500	50.00	1,048.00	1,050.00
Metaux, Cie. Fran. de	France	Metal d'iers	25,000,000	500	10.00	480.00	475.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	55.00	999.00	1,000.00
Napthe Baku	Russia	Petroleum	.....	.....	.....	704.00	705.00
Napthe Nobel	"	"	.....	.....	.....	527.50	528.50
" " parts	"	"	.....	.....	.....	10,587.50	10,612.50
Nickel	N. Caled'nia	Nickel	10,000,000	250	17.50	500.00	500.00
Penarroya	Spain	Coal, etc	.....	500	100.00	2,650.00	2,600.00
Rebecca	Colo'do,U.S.	Gold	5,000,000	25	.....	2.00	2.00
Salines de l'Est	France	Salt	.....	500	5.00	210.00	210.00
Salines du Midi	"	"	.....	500	25.00	880.00	890.00
Vielle Montagne	Belgium	Zinc	9,000,000	80	36.00	662.50	677.50

LONDON.

Jan. 25

Name of Company.	Country.	Author-ized capital.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers.
			£ s. d.	s.d.		£ s. d.	£ s. d.
American:							
Alaska Goldfields, g	Alaska	£800,000	1 0 0	2 3	Jan., 1901	13 9	16 3
Alaska-Treadwell, g	"	1,000,000	5 0 0	1 6	" "	5 2 6	5 5 0
Anaconda, c., s	Montana	6,000,000	5 0 0	8 2	Oct., 1900	8 5 0	8 10 0
De Lamar, g., s	Idaho	1,000,000	1 0 0	0 6	May, 1900	2 6	3 6
El Oro	Mexico	1 000,000	1 0 0	1 0	Jan., 1901	1 6 3	1 7 6
Enterprise, g	British Col'mbia	200,000	1 0 0	.....	.....	10 0	15 0
Grand Central, g., s	Mexico	300,000	1 0 0	2 0	Jan., 1900	5 0	10 0
Hall Mg. & Sm., c., s	British Col	250,000	1 0 0	.....	.....	4 6	5 6
Le Roi, g	" "	1,000,000	5 0 0	5 0	Nov., 1899	5 17 6	6 2 6
Le Roi No. 2, g	" "	120,000	5 0 0	.....	.....	4 10 0	5 10 0
Lillie, g	Colorado	250,000	1 0 0	2½	Apr., 1900	7 6	12 6
Montana, g., s	Montana	660,000	1 0 0	6	Apr., 1899	3 0	3 6
Mountain Copper	California	1,250,000	5 0 0	9 0	Oct., 1900	4 12 6	4 17 6
Stratton's Independence	Colorado	1,100,000	1 0 0	6	Jan., 1901	1 0 0	1 2 6
Copiapo, c	Chile	200,000	2 0 0	3 4	Dec., 1900	3 0 0	3 5 0
Frontino & Bolivia, g	Colombia	140,000	1 0 0	1 6	Oct., 1899	2 0 0	2 2 6
St. John del Rey, g	Brazil	600,000	1 0 0	1 0	Dec., 1900	1 0 0	1 2 6
Utah Con.,g.(High'nd Boy)	Utah	300,000	1 0 0	rts.	Mar., 1898	6 7 6	6 12 6
Velvet, g	British Col'mbia	100,000	1 0 0	.....	.....	17 6	1 0 0
Ymir, g	"	200,000	1 0 0	1 0	Jan., 1901	1 8 9	1 13 9
Rossland Great West, g	"	100,000	5 0 0	.....	.....	2 0 0	2 10 0
British Am. Corp	"	1,500,000	1 0 0	2 0	Mar., 1900	4 0	5 0
European:							
Linares, l	Spain	45,000	3 0 0	14 0	Oct., 1900	8 10 0	9 10 0
Mason & Barry, c., sul	Portugal	420,000	2 0 0	£1	" "	3 5 0	3 10 0
Rio Tinto, c	Spain	1,625,000	5 0 0	£2	" "	37 10 0	37 15 0
" " pref	" "	1,625,000	5 0 0	2 6	" "	6 0 0	6 2 6
Tharsis, c	" "	1,250,000	2 0 0	15 0	Apr., 1900	8 15 0	9 0 0
Australian:							
Assoc. Gold Mines	W. Australia	500,000	1 0 0	1 6	Jan., 1900	2 7 6	2 10 0
Broken Hill Prop., s	N. S. Wales	384,000	8 0	1 6	Nov., 1900	2 7 0	2 8 0
Great Boulder Prop	W. Australia	175,000	2 0	6	Feb., 1901	1 1 9	1 2 3
Hannan's Brownhill, g	"	140,000	1 0 0	7 6	Oct., 1900	2 15 0	3 0 0
Ivanhoe Gold Corp	"	1,000,000	5 0 0	5 0	Nov., 1900	6 5 0	6 10 0
Kalgurlie, g	"	120,000	1 0 0	rts.	Oct., 1899	3 10 0	3 15 0
Lake View Consols, g	"	250,000	1 0 0	5 0	Aug., 1900	5 17 6	6 0 0
Mt. Lyell M. & R., l., c	Tasmania	900,000	3 0 0	2 0	Jan., 1900	5 7 6	5 12 6
Mt. Morgan, g	Queensland	1,000,000	1 0 0	7	Dec., 1900	4 17 6	5 0 0
Waihi g	New Zealand	320,000	1 0 0	rts.	Jan., 1901	10 10 0	10 15 0
Indian:							
Champion Reef, g	Colar Fields	220,000	10 0	5 0	Jan., 1901	5 12 6	5 15 0
Mysore Gold, g	"	256,300	10 0	4 0	Nov., 1900	5 11 3	5 13 9
Nundyroog, g	"	242,000	1 0 0	2 0	" "	3 1 3	3 3 9
Ooregum, g	"	145,000	1 0 0	2 6	Dec., 1900	3 13 9	3 16 3
" pref. g	"	130,000	1 0 0	2 6	" "	4 17 6	5 0 0
African:							
British S. Africa, chartered	So. Africa	5,000,000	1 0 0	rts.	May, 1899	2 18 9	3 1 3
Cape Copper, c	"	600,000	1 0 0	5 0	Jan., 1901	5 0 0	5 5 0
" " pref	"	150,000	2 0 0	5 0	" "	4 15 0	5 5 0
City & Suburban (New), g	Transvaal	1,360,000	4 0 0	8 0	Aug., 1899	4 12 6	4 17 6
Con. Deep Level, g	"	200,000	1 0 0	x all	June, 1898	17 6	1 2 6
Crown Reef, g	"	120,000	1 0 0	18 0	Nov., 1899	12 10 0	13 0 0
De Beers Con., d	Cape Colony	3,950,000	5 0 0	£1	Jan., 1901	28 5 0	28 10 0
Ferreira, g	Transvaal	90,000	1 0 0	30 0	Aug., 1899	18 0 0	19 0 0
Geldenhuis Deep, g	"	350,000	1 0 0	8 0	" "	8 0 0	8 10 0
Geldenhuis Est., g	"	200,000	1 0 0	10 0	" "	5 7 6	5 10 0
Henry Nourse, g	"	125,000	1 0 0	10 0	Apr., 1900	3 17 6	3 2 6
Jagersfont

DIVIDENDS.

GOLD, SILVER, COPPER, ZINC, LEAD AND QUICKSILVER COMPANIES.

Number.	Name and Location of Company.		Author-ized Capital Stock.	Shares Issu'd No.	Shares Issu'd Par Val	Dividends Paid, 1901.	Dividends Total to Date.	Latest Date.	Latest Amt.
1	Acacia, g.	Colo.	$1,500,000	1,500,000	$1	.....	$45,000	Dec.. 1900	.01
2	Adams, s.l.c.	Colo.	1,500,000	150,000	10	.....	701,000	Nov.. 1900	.05
3	Ætna Con., q.	Cal..	500.000	100.000	5	.....	225,000	April. 1900	.15
4	Alaska-Mexican, g.	Alask	1,000.000	180.000	5	$18,000	519,031	Jan.. 1901	.10
5	Alaska-Treadwell, g.	Alask	5.000.000	200.000	25	75,000	4,595,000	Jan.. 1901	.37½
6	Amalgamated, c.	Mont.	75,000,000	750,000	100	1,500,000	9,000,000	Jan.. 1901	2.00
7	Amazon, g.	Colo..	600,000	600,000	1	.....	121,882	May.. 1900	.10
8	Amer. Sm. & Ref., pref.	U. S..	32,500,000	274,000	100	479,500	3,162,053	Jan.. 1901	1.75
9	Am. Zinc, Lead & Sm.	Mo...	2,500,000	60,000	25	.....	180,000	Jan.. 1900	1.00
10	Anaconda, c.	Mont.	30,000,000	1,200,000	25	.....	16,950,000	Oct... 1900	2.00
11	Apollo Con., g	Alask	1,000,000	100,000	10	.....	210,000	Jan.. 1900	.07
12	Argonaut, g.	Cal..	2,000,000	200,000	10	.....	490,000	May.. 1900	.05
13	Arizona, c.	Ariz..	3,190,550	.....	.....	.....	1,464,848	Sept.. 1900	.84
14	Atlantic, c.	Mich.	1,000,000	40,000	25	80,000	880,000	Feb.. 1901	2.00
15	Bald Butte, g. s.	Mont.	250,000	250,000	1	.....	852,148	Sept.. 1900	.06
16	Boston-Aurora, pref.	Mo...	800.000	32,000	25	.....	66,160	May.. 1900	.50
17	Boston & Colo. Smelting	Colo..	750,000	15,000	50	11,250	326,350	Jan.. 1901	.75
18	Boston Duenweg, z.	Mo...	1,000,000	40.000	10	.....	56,900	June.. 1900	.10
19	Boston Get There, z.	Mo...	250,000	22,500	10	.....	20,250	April. 1900	.10
20	Boston Gold-Copper Sm.	Colo..	1,000,000	1,000,000	1	.....	50,000	Nov.. 1900	.02½
21	Boston & Mont. Con., c.s.g	Mont.	3,750,000	150,000	25	1,500,000	22,475,000	Feb.. 1901	10.00
22	Boston Phila., z. l.	Kas..	200.000	20,000	10	.....	2,000	May.. 1900	.10
23	Boston Providence, z., pf	Mo...	150,000	15,000	10	.....	17,242	Aug.. 1900	.05
24	Boston, q.	Cal..	1,000,000	100,000	10	.....	20,000	Jan.. 1900	.10
25	Boston Springfield, z.	Mo...	500,000	20,000	25	.....	15,000	June.. 1900	.25
26	Breece, i.s.	Colo..	5,000,000	200,000	25	.....	100,000	Dec.. 1900	.05
27	Buffalo Hump, g. s. l.	Idaho	1,000,000	100,000	10	25,000	300,000	Jan.. 1901	.10
28	Bullion-Beck & Champ.	Utah.	1,000,000	100,000	10	.....	2,498,400	June.. 1900	.10
29	Bull Hill Con., g.	Colo..	1,500,000	1,500,000	1	.....	15,000	Dec.. 1900	.01
30	Bunker Hill & Sullivan.	Idaho	3,000,000	300,000	10	21,000	1,074,000	Jan.. 1901	.07
31	Butte & Boston Con., c.	Mont.	2,000,000	200,000	10	.....	1,000,000	Dec.. 1900	5.00
32	Butterfly-Terrible, g.	Colo..	1,500,000	1,250,000	1	6,250	6,250	Jan.. 1901	.00½
33	Calumet & Hecla, c.	Mich.	2,500,000	100,000	25	.....	73,850,000	Dec.. 1900	20.00
34	Cariboo-McKinney, g.	B. Col	1,250,000	1,250,000	1	.....	478,087	Oct... 1900	.01½
35	Centen'l-Eureka, g.s.l.c.	Utah.	5,000,000	100,000	25	50,000	2,467,700	Jan.. 1901	.50
36	Center Creek, l. z.	Mo....	1,000,000	100,000	10	.....	40,000	Dec.. 1900	.20
37	Center Star, g.	B. C..	3,500,000	3,500,000	1	35,000	105,000	Feb.. 1901	.01
38	Central Lead, l.	Mo...	1,000,000	10,000	100	5,000	212,000	Jan.. 1901	.50
39	Cloverdale, z.	Mo...	1,000,000	100,000	10	.....	80,000	July.. 1900	.20
40	Columbia, l.	Mo...	500,000	48,500	10	.....	16,975	Nov.. 1900	.05
41	Commonwealth, z., pref.	Mo ..	500,000	100,000	5	.....	50,000	June. 1900	.05
42	Consolidated Gold Mines	Colo..	1,000,000	1 000,000	1	10,000	140,000	Jan.. 1901	.01
43	Con. Mercer Gold Mines.	Utah.	5,000,000	1,000,000	5	.....	1,591,000	Nov.. 1900	.11
44	Consolidated, z. l., pf.	Mo...	400,000	400,000	1	.....	8,000	Jan.. 1900	.20
45	Cordell, z. l.	Mo...	300.000	60.000	5	.....	30,000	Sept.. 1900	.05
46	Cresus, g.	Cal...	1,000,000	200,000	5	.....	151,300	Dec.. 1901	.06
47	Daly West, g.	Utah.	3,000,000	150,000	20	90,000	697,500	Feb.. 1901	.30
48	De Lamar, g. s.	Idaho	2,000,000	400,000	5	.....	2,394,000	May.. 1900	.12
49	Dixie, g.	Utah.	125,000	125,000	1	.....	10,000	April. 1900	.02
50	Doctor-Jack Pot Con., g	Colo..	3,000,000	2,900,000	1	29,000	29,000	Jan.. 1901	.01
51	Doe Run, l.	Mo...	1,500,000	10,000	100	15,000	417,072	Jan.. 1901	1.50
52	Ducktown, c. i. sul. (ord)	Tenn.	374,000	7.480	50	.....	133.144	May.. 1900	5.00
53	Ducktown (founder).	Tenn.	1,000	200	5	.....	66,160	May.. 1900	125.00
54	Elkton Con., g.	Colo..	3,000,000	2,500,000	1	.....	979,461	Dec.. 1900	.03
55	Empire State-Idaho.	Idaho	6.000.000	100,000	10	29,554	702,241	Jan.. 1901	.30
56	Florence, s.	Mont.	2,500,000	440,000	5	.....	252,000	April. 1900	.05
57	Frisco Con., l. s.	Idaho	2,500,000	500,000	5	.....	920,000	Nov.. 1899	.25
58	Gemini	Utah.	500.000	5,000	100	.....	700,000	Aug.. 1900	10.00
59	Gold Belt, g.	Colo..	1,250,000	1,250,000	1	.....	112,500	Aug.. 1900	.09
60	Gold Coin of Victor, g.	Colo..	1,000,000	1,000,000	1	30,000	630,000	Jan.. 1901	.03
61	Gold Deposit, g.	Colo..	500,000	500,000	1	.....	10,000	Mar.. 1900	.02
62	Gold King, g.	Colo..	1,000,000	936,850	1	.....	178,001	Oct... 1900	.03
63	Golden Cycle, g.	Colo..	1,000,000	200,000	5	10,000	388,500	Jan.. 1901	.05
64	Golden Eagle, g.	Colo..	500,000	500,000	1	.....	25,000	June. 1900	.01
65	Grand Central, g.	Utah.	250,000	250,000	1	.....	691,250	Nov.. 1900	.10
66	Grand Gulch, c.	Ariz..	250,000	240,000	1	.....	9,600	April. 1900	.01
67	Grass Valley Expl	Cal..	100,000	30,000	2	.....	67,500	May.. 1900	.25
68	Greater Gold Belt, g.	Col..	5,000,000	3,800,000	1	.....	76,000	June. 1900	.02
69	Gwin, g.	Cal.	1,000,000	100,000	10	15,000	166,500	Jan.. 1901	.15
70	Hecla, l. s.	Idaho	250,000	1,000,000	¼	.....	100,000	Dec.. 1900	.02
71	Hecla Con., s. l.	Mont.	1,500,000	30,000	50	.....	2,220,000	Dec.. 1900	.05
72	Helena, g.	Ore..	1,000,000	1,000,000	1	5,000	50,000	Jan.. 1901	.00½
73	Hidden Treasure, g.	Cal..	360,000	36,000	10	.....	457,452	Sept.. 1900	.10
74	Holy Terror, g.	S. D.	500,000	500,000	1	.....	172,000	Jan.. 1900	.01
75	Home, g.	Colo..	50,000	50,000	1	.....	100,000	July.. 1900	.50
76	Homestake, g.	S. D..	21,000,000	210,000	$100	$105,000	$9,508,750	Jan.. 1901	.50
77	Horn-Silver, g. s. c.z.l.	Utah.	10,000,000	400,000	25	.....	5,279,000	June. 1900	.05
78	Ingham Con., g.	Colo..	750,000	1,359,600	½	6,798	6,798	Jan.. 1901	.00½
79	Iowa, g. s. l.	Colo..	1,666,667	1,666,667	1	.....	136,834	June. 1900	.00½
80	Iron Silver	Colo..	10,000,000	500,000	20	.....	2,550,000	Dec.. 1900	.10
81	Isabella, g.	Colo..	2,250,000	2,250,000	1	.....	720,000	Dec.. 1900	.01
82	Jamison, g.	Cal ..	3,900.000	390,000	10	.....	50,700	April. 1899	.10
83	La Fortuna, g.	Ariz..	250,000	250,000	1	.....	920,500	Dec.. 1900	.05
84	Lake City, g	Colo..	50,000	50,000	1	.....	3,875	May . 1900	.01
85	Last Dollar, g.	Colo..	1,500,000	1,500,000	1	.....	130,000	Nov.. 1900	.02
86	Le Roi, g.	B.Col	5,000,000	200,000	5	.....	1,305,000	Nov.. 1899	1.20
87	Lightner, g.	Cal...	125,000	105,000	1	.....	5,250	Oct... 1900	.05
88	Lillie, g.	Colo..	1,250,000	250,000	5	.....	349,183	April. 1900	.05
89	Mammoth, g. s. c.	Utah	10,000,000	400,000	25	.....	1,790,000	Nov.. 1900	.05
90	Marion Con., g.	Colo..	5,000,000	500,000	10	.....	300,000	May.. 1899	.01
91	Mary McKinney, g.	Colo..	1,000,000	1,000,000	1	30,000	210,000	Jan.. 1901	.03
92	Midget, g.	Colo..	1,000,000	1,000,000	1	.....	120,000	Dec.. 1900	.15
93	Modoc, g. s.	Colo..	500,000	500,000	1	5,000	210,000	Jan.. 1901	.01
94	Montana, Ltd., g. s.	Mont.	3,300,000	657,128	5	.....	453,700	April. 1899	.12
95	Montana Ore Purchas'g.	Mont.	2,500,000	80,000	25	240,000	1,840,000	Jan.. 1901	3.00
96	Morning Star Drift, g.	Cal...	240,000	2,400	100	.....	854,400	Sept.. 1900	3.00
97	Mountain, c.	Cal ..	6,250,000	250,000	25	.....	2,373,750	Oct... 1900	2.16
98	Mt. Diablo, s.	Nev..	5,000,000	50,000	100	.....	260,271	Jan.. 1900	.10
99	Mt. Rosa, g.	Colo..	1,000,000	1,000,000	1	.....	75,000	Dec.. 1899	.04
100	Moulton, g.	Mont.	2,000,000	400,000	5	.....	500,000	Oct... 1899	.05
101	Napa Con., q.	Cal ..	700,000	100,000	7	10,000	1,210,000	Jan.. 1901	.10
102	National Lead, com.	U. S..	15,000,000	149,054	100	.....	1,341,486	Mar.. 1900	1.00
103	National Lead, pf.	U. S .	15,000,000	149,040	100	.....	10,579,280	Dec.. 1900	1.75
104	New Idria, q.	Cal...	500,000	100,000	5	20,000	270,000	Jan.. 1901	.20
105	N. J. & Mo., z.	Mo...	250,000	2,500	100	.....	11,000	June.. 1900	2.00
106	N.Y.& Hon Rosario, s.g.	C. A..	1,500,000	150,000	10	15,000	1,430,000	Jan.. 1901	.10
107	New Zealand, g.	Colo..	600,000	600,000	1	60,000	60,000	Jan.. 1901	.10
108	North Star, g.	B. C..	1,500,000	1,300,000	1	.....	117,000	Dec.. 1900	.03
109	North Star Mines.	Cal ..	5,000,000	250,000	10	.....	584,850	Nov.. 1899	.20
110	Nugget, g.	Colo..	1,000,000	991,000	1	9,910	64,910	Jan.. 1901	.01
111	Old Colony Zinc & Sm.	Mo...	1,100,000	69,909	10	17,477	85,753	Feb.. 1901	.25
112	Omega, g.	Colo..	1,500,000	1,212,550	1	.....	18,188	June. 1900	.01½
113	Ontario, s. l.	Utah.	15,000,000	150,000	100	.....	13.662,500	April. 1900	.30
114	Osceola, c.	Mich.	2,500,000	93,000	25	.....	3,688,500	Dec.. 1900	3.00
115	Parrot, c.	Mont.	2,300,000	229,850	10	344,775	4,738,600	Jan.. 1901	1.50
116	Pennsylvania Con., g.	Cal...	5,150,000	51,500	100	.....	161,325	May.. 1900	.10
117	Plumas Eureka, g.	Cal ..	1,406,250	140,625	10	.....	2,797,544	April. 1900	.60
118	Portland, g.	Colo..	3,000,000	3,000,000	1	180,000	3,487,080	Jan.. 1901	.06
119	Quicksilver, pref.	Cal...	4,300,000	43,000	100	.....	1,866,911	July.. 1900	.50
120	Quincy, c.	Mich.	2,500,000	100,000	25	300,000	12,270,000	Feb.. 1901	3.00
121	Rambler—Cariboo, s. l.	B.Col	1,250,000	1,250,000	1	.....	105,000	Mar.. 1900	.01
122	Republic Con., g.	Wash	3,500,000	3.500,000	1	.....	382.500	Mar.. 1900	.01
123	Rocco-Homestake, g.s.	Nev..	300,000	300,000	1	4,500	13,500	Jan.. 1901	.01½
124	Sacramento, g.	Utah.	5,000,000	1,000,000	5	.....	138,000	Oct... 1899	.00½
125	St. Joseph, l.	Mo...	3,000,000	250,000	10	.....	3,309,500	Dec.. 1900	.15
126	Santa Rita, g.	Colo..	1.000.000	1,000,000	1	.....	4,000	July.. 1900	.02
127	Silver King, g. s. l.	Utah.	3,000,000	150,000	20	75,000	3,525,000	Jan.. 1901	.50
128	Silver Shield, g.	Utah.	300,000	300,000	1	1,500	3,000	Jan.. 1901	.00½
129	Small Hopes, s.	Colo..	5,000 000	250,000	20	.....	3,325,000	Feb.. 1899	.10
130	Smuggler, s. l. z.	Colo..	1,000,000	1,000,000	1	30,000	1,760,000	Jan.. 1901	.03
131	South Swansea, s. l.	Utah.	150,000	150,000	1	.....	165,000	Oct... 1899	.05
132	Southern Boy, g.	Colo..	1,250,000	875,000	1	.....	17,500	May . 1900	.02
133	Squaw Mountain, g.	Colo..	2,000,000	2,000,000	1	.....	10,000	Nov.. 1899	.00½
134	Standard Con., g. s.	Cal...	2,000,000	200,000	10	.....	3,979,226	Nov.. 1900	.10
135	Standard, s. l.	Idaho	500,000	500,000	1	.....	2,165,000	Dec.. 1900	.08
136	Stratton's Independ'ce.	Colo..	5,500,000	1,000,007	5	120,001	2,885,353	Jan.. 1901	.12
137	Swansea, s. l.	Utah.	500,000	100,000	5	5,000	281,500	Jan.. 1901	.05
138	Tamarack, c.	Mich.	1,500,000	60,000	25	.....	7,290,000	Dec.. 1900	10.00
139	Tomboy, g.	Colo..	1,500,000	300,000	5	.....	956,000	Dec.. 1900	.24
140	Touraine, g.	Colo..	1,250,000	1,250,000	1	.....	87,500	April. 1900	.07
141	Union, g.	Colo..	1,250,000	1,250,000	1	.....	395,244	Sept.. 1900	.25
142	Union, z. l.	Kas..	500,000	500,000	1	10,000	45,000	Feb.. 1901	.01
143	United, z. l., pref.	Mo...	6,000,000	14.938	25	.....	30,263	Oct... 1900	.50
144	Utah, g.	Utah.	1,000,000	100,000	10	.....	181,000	Oct... 1900	.02
145	Vindicator Con., g.	Colo..	1,500,000	1,500,000	1	27.500	521,000	Jan.. 1901	.02½
146	War Eagle Con., g. s. c.	B. C..	2,000,000	1,750,000	1	.....	545,250	Feb.. 1900	.01½
147	What Cheer, z.	Mo...	225,000	22,500	10	.....	11,250	May.. 1900	.20½
148	Wolverine, c.	Mich.	1,500,000	60,000	25	.....	510,000	Oct.. 1900	2.00
149	Yellow Aster, g.	Cal...	1,000,000	100,000	10	.....	459,410	Dec.. 1900	.10
150	Zoe, g.	Colo.	1.500,000	1,500,000	1	.....	7,500	Dec.. 1900	.00½

COAL, IRON AND OTHER COMPANIES.

Number.	Name and Location of Company.		Author-ized Capital Stock.	Shares Issu'd No.	Shares Issu'd Par Val	Dividends Paid, 1901.	Dividends Total to Date.	Latest Date.	Latest Amt.
1	Alabama Coal & Iron, pf	Ala...	$2,500,000	25,000	$100	.....	$218,750	Nov.. 1900	1.75
2	Altoona Coal & Coke.	Pa....	2,500 000	250 000	10	$75,000	75,000	Jan.. 1901	.30
3	Am. Agricul. Chem., pf.	U. S..	20,000,000	170,000	100	.....	1,530,000	Oct... 1900	3.00
4	American Cement	Pa....	2,100,000	200,000	10	80,000	220,000	Jan.. 1901	.40
5	American Coal	Md...	1,500,000	60,000	25	.....	982,500	Sept.. 1900	1.00
6	Am. Fuel Oil	Cal...	100,000	100,000	1	1,000	16,000	Jan.. 1901	.01
7	Am. Iron & Steel, com.	Pa....	17,000,000	34,000	50	8,500	42,500	Jan.. 1901	.25
8	Am. Iron & Steel, pf.	Pa....	3,000,000	60,000	50	37,500	237,480	Jan.. 1901	.62½
9	Am. Sheet Steel, pf.	U. S..	26,000,000	245,000	100	428,750	428,750	Jan.. 1901	1.75
10	Am. Steel Hoop, pf.	U. S..	14,000,000	140,000	100	245,000	1,470,000	Jan.. 1901	1.75
11	Am. Steel & Wire, com.	U. S..	50,000,000	500,000	100	.....	2,625,000	Oct... 1900	1.75
12	Am. Steel & Wire, pf.	U. S..	40,000,000	400,000	100	700,000	6,300,000	Jan.. 1901	1.75
13	Arizona Western Oil	Cal...	100,000	100,000	1	.....	1,000	Sept.. 1900	.01
14	Bethlehem Steel	Pa....	15,000 000	300,000	50	.....	900,000	Dec.. 1900	.50
15	Buckhorn Oil	Cal...	200,000	16,000	10	.....	3,800	Mar.. 1900	.05
16	Burlington Oil	Cal...	60,000	60,000	1	600	4,200	Jan.. 1901	.01
17	Cambria Steel	Pa....	16,000,000	320,000	50	160,000	1,760,000	Feb.. 1901	.50
18	Central Oil	W.Va	1,500,000	60,000	25	22,500	45,000	Feb.. 1901	.37½
19	Colo. Fuel & Iron, pf.	Colo..	2,000,000	20,000	100	80,000	1,240,000	Feb.. 1901	4.00
20	Consolidation Coal	Md...	10,250,000	102,500	100	205,000	5,318,000	Feb.. 1901	2.00
21	Continental Oil	Cal...	300,000	240,000	1	7,200	7,200	Apr.. 1901	.03
22	Crucible Steel, pf.	U. S..	25,000,000	243,995	100	.....	426,991	Dec.. 1900	1.75
23	Diamond Star Oil	Cal...	250,000	100,000	1	.....	6,250	Nov.. 1900	.02
24	Diamond State Steel	Del ..	3,000,000	150,000	100	60,000	160,000	Jan.. 1901	.40
25	Empire Steel & Iron, pf.	U. S..	5,000,000	23,700	100	35,550	213,300	Jan.. 1901	1.50
26	Federal Steel, com.	U. S..	100000,000	464,843	100	2,324,215	4,067,377	Feb.. 1901	5.00
27	Federal Steel, pf.	U. S..	100000,000	532,609	100	798,914	7,456,568	Jan.. 1900	1.50
28	Flat Top C. L. Ass'n, com	Va. ..	5,000,000	37,141	100	37,141	315,699	Feb.. 1901	1.00
29	Flat Top C. L. Ass'n, pf.	Va. ..	5,000,000	37,141	100	37,141	1,987,027	Feb.. 1901	1.00
30	General Chem., com.	U. S..	12,500,000	70,703	100	.....	411,814	Dec.. 1900	1.00
31	General Chem., pf.	U. S..	12,500,000	81,264	100	121,896	641,855	Jan.. 1901	1.50
32	Gray Eagle Oil	Cal...	250,000	100,000	2½	50,000	170,000	Jan.. 1901	.50
33	Great Western Oil	Cal...	100,000	10,000	10	.....	10,000	Oct... 1900	.10
34	Home Oil	Cal...	100,000	100,000	1	10,000	210,000	Jan.. 1901	.10
35	Homestake Oil	Cal...	100,000	10,000	10	.....	23,000	Dec.. 1900	.25
36	Jefferson & Clearf. C'l, cm	Pa....	1,500,000	15,000	100	.....	30,000	Aug.. 1900	2.00
37	Jefferson & Clearf. C'l, pf.	Pa....	1,500,000	15,000	100	37,500	225,000	Feb.. 1901	2.50
38	Kern Oil	Cal...	100,000	100,000	1	25,000	350,000	Jan.. 1901	.25
39	Kern River Oil	Cal...	100,000	20,000	5	.....	10,000	Sept.. 1900	.50
40	Lehigh Coal & Nav.	Pa....	14,346,650	286,933	$50	.....	18,516,990	Oct... 1900	1.50
41	Maryland Coal, pf.	Md...	1,885,005	18,850	100	.....	645,869	Dec.. 1900	3.00
42	Monongahela R. Coal, pf	Pa....	10,000,000	200,000	50	$350,000	700,000	Jan.. 1901	1.75
43	Montana Coal & Coke.	Mont.	5,000,000	200,000	25	.....	120,000	Oct... 1900	.30
44	National Salt, com.	U. S..	7,000,000	70,000	100	105,000	350,000	Feb.. 1901	1.50
45	National Salt, pf.	U. S..	5,000,000	50,000	100	87,500	612,500	Feb.. 1901	1.75
46	National Steel, pf.	U. S..	27,000,000	270,000	100	.....	3,307,500	Dec.. 1900	1.75
47	National Tube, com.	U. S..	40,000,000	398,604	100	597,906	1,793,718	Feb.. 1901	1.50
48	National Tube, pf.	U. S..	40,000,000	399,963	100	699,935	4,199,611	Jan.. 1901	1.75
49	New Central Coal	Md...	1,000,000	50,000	20	.....	510,000	Nov.. 1900	.40
50	New Haven Iron & Steel	Conn.	500,000	100,000	5	7,500	102,500	Jan.. 1901	.07½
51	Oceanic Oil	Cal...	100,000	100,000	1	.....	2,000	Dec.. 1900	.01
52	Pacific Coast Borax	Cal...	2,000,000	20,000	100	.....	762,500	Dec.. 1900	1.00
53	Park Crude Oil	Cal...	100,000	82,146	1	.....	4,897	Sept.. 1900	.01
54	Pennsylvania Coal	Pa....	5,000,000	100,000	50	.....	19,700,000	Nov.. 1900	2.00
55	Pennsylvania Salt Mfg.	Pa....	2,500,000	50,000	50	.....	12,550,000	Oct... 1900	3.00
56	Pennsylvania Steel, pf.	Pa....	1,500,000	15,000	100	26,250	157,500	Jan.. 1901	1.75
57	Pittsburg Coal., pf.	Pa....	32,000,000	320,000	100	560,000	2,800,000	Jan.. 1901	1.75
58	Producers' & Con. Oil	Cal...	1,000,000	10,000	100	.....	50,000	Oct... 1900	.30
59	Republic Iron & Steel, pf	U. S..	25,000,000	203,069	100	855,371	2,132,225	Jan.. 1901	1.75
60	Rex Crude Oil	Cal...	500,000	85,000	5	.....	26,000	Oct... 1900	.03
61	San Joaquin Oil	Cal...	100,000	100,000	1	10,000	10,000	Jan.. 1901	.10
62	Shawmut Oil	W.Va	1,250,000	50,000	25	25,000	25,000	Feb.. 1901	.50
63	Shelby Iron	Ala ..	1,000,000	10,000	100	.....	250,000	June. 1900	12.00
64	Sloss-Sheffield Ir.&St., pf	U. S..	20,000,000	67,000	100	114,000	456,000	Jan.. 1901	1.75
65	So. Cal. Oil & Fuel	Cal...	300,000	100,000	1	.....	3,000	Dec.. 1900	.00½
66	Standard Oil (of N. J.).	U. S..	100000,000	975,000	100	.....	73,125,000	Sept.. 1900	8.00
67	Susquehanna I. & S., pf.	Pa..	1,500,000	300,000	5	22,500	537,500	Jan.. 1901	.07½
68	Tenn. Coal, I. &R.R., com	Tenn.	23,000,000	225,536	100	.....	1,102,144	Nov.. 1900	2.00
69	Tenn. Coal, Ir. & R.R., pf	Tenn.	248,000	2,480	100	4,960	248,000	Feb.. 1901	2.00
70	Texas & Pacific Coal.	Tex..	2,000,000	20,000	100	30,000	1,880,000	Jan.. 1901	1.50
71	United States Crude Oil.	Cal...	100,000	10,000	1	.....	3,200	Dec.. 1900	.03
72	United States Oil	W.Va	2,500,000	100,000	25	.....	744,250	Oct... 1900	.50
73	Va.-Carolina Chem., com	U. S..	12,000,000	90,000	100	.....	720,000	Dec.. 1900	1.00
74	Va.-Carolina Chem., pf.	U. S .	12,000,000	100,000	100	200,000	1,400,000	Jan.. 1901	2.00
75	Warwick Iron & Steel.	Pa....	1,500,000	14,133	100	.....	158,597	Nov.. 1900	2.00
76	West Lake Oil	Cal ..	500,000	500,000	1	.....	50,000	Sept.. 1900	.01
77	Westmoreland Coal.	Pa....	5,000,000	250,000	50	.....	750,000	Oct... 1900	1.50
78	Yukon Oil	Cal...	2,500,000	100,000	2½	.....	21,000	Oct... 1900	.02

This table is corrected up to January 30th. Correspondents are requested to forward changes or additions.

CHEMICALS, MINERALS, RARE ELEMENTS, ETC.—CURRENT WHOLESALE PRICES.

	Cust.	Meas.	Price.
Abrasives—			
Carborundum, f.o.b. Niagara Falls, Powd.,			
F. FF. FFF		lb.	$0.12
Minute No. 1		"	.15
No. 15		"	1.00
Corundum, N. C.		"	.07@.10
Chester, Mass.		"	.04½@.05
Crushed Steel, f. o. b. Pittsburg		"	.05½
Emery, Turkish flour, in kegs		"	.03
Grains, in kegs		"	.04½@.05
Naxos flour, in kegs		"	.03
Grains, in kegs		"	.05
Chester flour, in kegs.		"	.03
Grains, in kegs		"	.04½@.05
Peekskill flour, in kegs		"	.01¾
Grains, in kegs.		"	.02½
Crude, ex-ship, N. Y.:			
Kuluk (Turkey)		lg. ton	22.00@24.00
Abbott (Turkey)		"	26.50@30.00
Naxos (Greek) h. gr.		"	32.00
Pumice Stone, Am. powd.		lb.	.01½@.02
Italian, powdered		"	.01½
Lump, per quality		"	.04@.40
Rottenstone, ground		"	.02¼@.03
Lump, per quality		"	.05@.14
Rouge, per quality		"	.10@.30
Steel Emery, f.o.b. Pittsburg		"	.07
Acids—Acetic, 30% pure		100 lbs.	3.50
30% ch. pure		"	6.00
80% pure		"	7.50
Benzoic, English		oz.	.12
German		lb.	.45
Boracic, cryst.		"	.10½@.11
Powdered		"	.11@.11½
Carbolic, crude, 60%		gal.	.27
Cryst. 37% drums		lb.	.23
Liquid, 95%		gal.	.45
Carbonic, liquid gas		lb.	.12½
Chromic, crude		"	.20
Chem. pure		"	.50
Hydrochloric, ch. pure.		"	.07
Hydrofluoric, 36%		"	.03
48%		"	.05
Best		"	.25
Nitric, chem. pure		"	.09
Sulphuric, chem. pure		"	.07
Sulphurous, liquid anhy.		"	.08
Tartaric, cryst.		"	.29@.29½
Powder		"	.30@.30½
Alcohol—Grain		gal.	2.45
Refined wood, 95@97%		"	.75@.80
Purified		"	1.50
Alum—Lump		100 lbs.	1.75
Ground		"	1.85
Powdered		"	3.00
Chrome, com'l		"	2.75@3.00
Aluminum—Nitrate		lb.	1.50
Oxide, com'l, common		"	.06½
Best		"	.20
Pure		"	.80
Hydrated		100 lbs.	2.60
Sulphate, pure		"	1.50@1.75
Com'l		"	1.15@1.25
Ammonia—Aqua, 16°		lb.	.03
18°		"	.03¼
20°		"	.03¾
26°		"	.05¼
Ammonium—			
Bromide, pure		"	.52@.53
Carbonate lump		"	.08¼@.08¾
Powdered		"	.09½@.09¾
Muriate, gran.		"	.06
Lump.		"	.09¼
Nitrate, white, pure (99%)		"	.10½
Phosphate, com'l		"	.12
Chem. pure		"	60
Antimony—			
Glass		"	.30@.40
Needle, lump		"	.05½@.06
Powdered, ordinary		"	.05¾
Best		"	.08½
Oxide, com'l white, 95%		"	.09½
Com'l white, 99%		"	.12
Com'l gray		"	.07
Sulphuret, com'l		"	.16
Arsenic—White		"	.04½@.04⅝
Red		"	.07¼@.07½
Asphaltum—			
Ventura, Cal		sh ton	32.00
Cuban		lb.	.01⅛@.03¼
Egyptian, crude		"	.05½@.06
Trinidad, refined		lg. ton	35.00
San Valentino (Italian).		"	15.00
Seyssel (French) mastic.		sh.ton	20.00
Gilsonite, Utah, ordinary		lb.	.03
Select		"	.03¼
Barium—Carbonate, Lump, 80@90%		sh. ton	25.00@27.50
92@98%		"	26.00@29.00
Powdered, 80@90%		lb.	.01¾@.02
Chloride, com'l		"	.02@.02¼
Chem. pure cryst		"	.05
Nitrate, powdered		"	.06
Oxide, com'l, hyd. cryst		"	.18
Hydrated, pure cryst.		"	.25
Pure, powd.		"	.27
Sulphate		"	.01
Barytes—Am. Cr., No. 1.		sh.ton	9.00
Crude, No. 2		"	8.00
Crude, No. 3		"	7.75
German, gray		"	14.50
Snow white		"	17.00
Bauxite—Ga. mines: 1st grade		lg. ton.	5.00
Second grade		"	4.25@4.50
Ala., f.o.b., 1st grade		"	5.00
Second grade		"	4.25@4.50
Bismuth—Subnitrate		lb	1.75
Subcarbonate		"	1.95
Bitumen, "B"		"	.03½
"A"		"	.05
"A" and "B"		"	.04½
Bone Ash		"	03¾@.03½

	Cust.	Meas.	Price.
Borax		lb.	$ .07¼@.07½
Calcined		"	.25
Bromine		"	.40
Cadmium—Metallic		"	1.40
Sulphate		100 lbs.	2.00@2.50
Calcium—Acetate, gray		"	1.55
" brown		"	1.05
Carbide, ton lots, f. o. b. Niagara Falls, N. Y.		sh. ton	80.00
Carbonate, ppt.		lb.	.05
Chloride, com'l		100 lbs.	.75
Best		"	.80
Sulphite		lb.	.05
Cement—			
Portland, Am., 400 lbs.		bbl.	1.50@2.00
Belgium		"	1.95@2.20
English		"	2.45@2.55
German		"	2.30@2.70
"Rosendale," 300 lbs.		"	1.05
Sand cement, 400 lbs.		"	1.55@1.95
Slag cement, imported.		"	1.65
Ceresine—			
Orange and Yellow		lb.	.12
White		"	.14
Chalk—Lump, bulk		sh. ton	2.60
Ppt. per quality		lb.	.03¾@.06
Chlorine—Liquid		"	.30
Water		"	.15
Chrome Ore—			
(50% ch.) ex-ship, N. Y.		lg. ton	26.00
Sand, f.o.b. Baltimore		"	33.00
Bricks, f.o.b., Pittsburg. M			175.00
Clay, China—Am. com., ex-dock, N. Y.		lg ton	8.00
Am. best, ex-dock, N. Y.		"	9.00
English, common		"	12 00
Best grade		"	17 00
Fire Clay, ordinary		sh. ton	4.25
Best		"	6.00
Slip Clay		"	7.00
Coal Tar Pitch		gal.	.08
Cobalt—Carbonate		lb.	1.75
Nitrate		"	1.50
Oxide—Black		"	2.20@2.30
Gray		"	2.22@2.40
Smalt, blue ordinary		"	.14
Best		"	.19
Copperas		100 lbs.	.45
Copper—Carbonate		lb.	.18
Chloride		"	.25
Nitrate, crystals		"	.35
Oxide, com'l		"	.19
Cream of Tartar—Crys.		"	.21@.21½
Powdered		"	.21¼@.21½
Cryolite		"	.06½
Explosives—			
Blasting powder, A. 25 lb. keg			2.50
Blasting powder, B.		"	1.25
"Rackarock," A		lb.	.25
"Rackarock," B		"	.18
Judson R.R. powder		"	.10
Dynamite (20% nitroglycerine)		"	.13
(30% nitro-glycerine)		"	.14
(40% nitro-glycerine)		"	.15
(50% nitro-glycerine)		"	.16½
(60% nitro-glycerine)		"	.18
(75% nitro-glycerine)		"	.21
Glycerine for nitro (32 2-10° Be.)		"	.13½@.13¾
Feldspar—Ground		sh. ton	8.00@9.00
Fluorspar—In bulk.			
Am. lump, 1st grade		"	12.40
2d grade		"	11.90
Gravel & crushed, 1st g		"	11.40
2d grade		"	10.90
Ground, 1st grade		"	15.90
Foreign, lump		"	8.00@12.00
Ground		"	11.50@14.00
Fuller's Earth—Lump.		100 lbs.	.75
Powdered		"	.85
Refined lump		"	1.25
Graphite—Am. f. o. b. Providence, R.I. lump.		sh. ton	8.00
Pulverized		"	30.00
German, lump		lb.	.01¼
Pulverized		"	.01½@.02
Ceylon, common		"	.03½
Pulverized		"	.04@.08
Italian, pulv		"	.01¼
Gypsum—Ground		sh. ton	8.00@8.50
Fertilizer		"	7.00
Rock		lg. ton	4.00
English and French		"	14.00@16.00
Infusorial Earth—Ground, American, best		"	20.00
French		"	37.50
German		"	40.00
Iodine—Crude		100 lbs.	2.45
Iron—Muriate		lb.	.05
Nitrate, com'l		"	.01¼
True		"	.03½
Oxide, pure copperas col		"	.05@.10
Purple-brown		"	.02
Venetian red		"	.01@.01½
Scale		"	.01@.03
Kaolin—(See Clay, China).			
Kryolith—(See Cryolite.)			
Lead—Acetate, white		lb.	.07
Com'l, broken		"	.06½
Brown		"	.05½
Nitrate, com'l		"	.06½
gran		"	.8[illegible]
Lime—Com., ab. 250 lbs		bbl.	.70
Finishing		"	.80
Magnesite—Greece.			
Crude (95%)		lg. ton	6.50@7.00
Calcined		sh.ton	14.00@15.00
Bricks		M.	170.00
Am. Bricks, f o.b. Pittsburg		"	175.00
Magnesium—			
Carbonate, light, fine pd		lb.	.03¾
Blocks		"	.06@.09
Chloride, com'l		"	.01¾
Fused		"	.20

	Cust.	Meas.	Price.
Magnesium—			
Nitrate		lb.	$0.60
Sulphate		100 lbs.	.90
Manganese—Crude-pow'd 70@75% binoxide		lb.	.01¼@.01½
Crude, pow'd 75@85% binoxide		"	.01½@.02½
85@90% binoxide		"	.02½@.03¼
90@95% binoxide		"	.02¾@.05½
Carbonate		"	.16@.20
Chloride		"	.04
Ore, 50%, Foreign		unit	.26¾
Domestic		"	.30
Marble—Flour		sh. ton	6.00@7.00
Mercury—Bichloride		lb.	.77
Mica—N. Y. gr'nd, coarse		"	.03¼@.03¾
Fine		"	.04@.05
Sheets, N. C., 2x4 in		"	.30
3x3 in		"	.80
3x4 in		"	1.50
4x4 in		"	2.00
6x6 in		"	3.00
Scrap, f.o.b., Dillsboro, N. C.		sh. ton.	25.00
Mineral Wool—			
Slag, ordinary		sh. ton	19.00
Selected		"	25.00
Rock, ordinary		"	32.00
Selected		"	40.00
Monazite—92%			140.00
Nickel—Oxide, No. 1		lb.	1.00
No. 2		"	.60
Sulphate		"	.20@.21
Oils—Black, reduced 29 gr.: 25@30 cold test		gal.	.09¼@.09¾
15, cold test		"	.10¼@.10¾
Zero		"	.11¼@.12¼
Summer		"	.08¾@.09¼
Cylinder, dark steam ref		"	.08¼@.10¼
Dark filtered		"	.11¼@.15¾
Light filtered		"	.14¼@.17¼
Extra cold test		"	.21¼@.26¼
Gasoline, 86° @ 90°		"	.16@.21
Naphtha, crude 68@72°		bbl.	9.60
"Stove"		gal.	.12
Linseed, domestic raw		"	.56
Boiled		"	.58
Calcutta, raw		"	.85
Graphite, lubricating, Am. dry		lb.	.10
In oil		"	.12
Axle grease		"	.08½@.10
Wood grease		"	.05@.06
Ozokerite		"	.10@.12
Paints and Colors—			
Chrome green, common		"	.05
Pure		"	.16
Yellow, common		"	.10¼
Best		"	.25
Silica Graphite, thick		"	.12
Thinned		gal.	1.15
Lampblack, com'l		lb.	.03
Refined		"	.07
Litharge, Am. powd.		"	.05½@.06
English flake		"	.08
Glassmakers		"	.07½
Metallic, brown		sh. ton	19.00
Red		"	16.00
Ocher, Am. common		"	9.25@10.00
Best		"	21.25@25.00
Dutch, washed		lb.	.04¾
French, washed		"	.01¼@.02½
Orange mineral, Am.		"	.07¾@.08
Foreign, as to make		"	.08½@.11½
Paris green, pure, bulk		"	.12½
Red lead, American		"	.06
Foreign		"	.07¾
Shellac, "D. C."		"	.30
Native		"	.15
Turpentine, spirits		gal.	.40½
Ultramarine, best		lb.	.25
Vermilion, Amer. lead		"	.10@.15
Quicksilver, bulk		"	.64
English, imported		"	.80
White lead, Am., dry		"	.05¾
English		"	.06½@.07¾
Whiting, common		100 lbs.	.42
Gilders		"	.54
Zinc white, Am., ex. dry		lb.	.04⅝@.04⅞
American, red seal		"	.06¼
Green seal		"	.07¼
Foreign, red seal, dry		"	.06¼@.06⅝
Green seal, dry		"	.07¼@.09⅞
Potash—Caustic, ord		"	.04½@.05
Elect. (90%)		"	.06½
Potassium—			
Bicarbonate cryst		"	.08¼
Powdered or gran		"	.14
Bichromate, Am.		"	.06⅜
Scotch		"	.08½
Carbonate, hydrated		"	.04½
Calcined		"	.04
Chromate		"	.35
Cyanide (98@99%)		"	.27½@.28
Iodide, bulk		"	2.30
Permanganate, pure cr.		"	.11¼@.11½
Prussiate, yellow		"	.14⅝@.15¼
Red		"	.37
Silicate		"	.06
Sulphide, com'l		"	.10
Quartz—(See Silica).			
Rosin—			
Com. strained (280 lbs.)		bbl.	1.55
Best strained		"	3.30
Medium		"	1.90
Salt—			
N Y com. fine		sh. ton	2.00
N. Y. agricultural		"	1.50
Saltpeter—			
Crude		100 lbs.	3.50
Refined		"	4.25
Silica—Best foreign		lg. ton	10 00@11.00
Ground quartz, ord		sh. ton	6.00@8.00
Best		"	12.00@13.00
Lump quartz		"	2.50@4.00
Glass sand		"	2.75
Silicon—Carbide		lb.	.05

	Cust.	Meas.	Price.
Silver—			
Chloride		oz.	$0.65
Nitrate		"	.40
Oxide		"	.85@1.10
Slate—Ground, black		sh. ton	7.50@8.75
Ground, red and olive.		"	20.00
Sodium—Acetate, com'l.		lb.	.04¼
Bichromate		"	.06¾
Chlorate, com'l		"	.09@.09¼
Hyposulphite, Am.		100 lbs.	1.80
German		"	2.00
Nitrite, 96@98%		lb.	.08
Peroxide		"	.45
Phosphate		"	.02½
Prussiate		"	.12½
Silicate, conc		"	.05
com'l		"	.01
Sulphate, com'l		100 lbs.	.70
Gran., puri'd		lb.	.03
Sulphide		"	.01¾
Sulphite crystals		"	.02½
Tungstate, com'l		"	.35
Strontium—Nitrate		"	.08
Sulphur—Roll		100 lbs.	1.75
Flour		"	1.80
Flowers, sublimed		"	2.05
Talc—N. C., 1st grade		sh. ton	18.75
N. Y., Fibrous		"	8.00@9.00
French, best		100 lbs.	1.25
Italian, best		"	1.75
Tar—Regular		bbl.	2.00
Oil barrels		"	4.00
Tin—Bichloride		lb.	.09½@.10
Crystals		"	.22
Muriate, 36°		"	.09
52°		"	.15
Oxide, white, ch. pure		"	.40
Uranium—Oxide		"	2.25@3.00
Zinc—Metallic, ch. pure		"	.07¼@.09¼
Carbonate		"	.15
Chloride		"	.05
Dust		"	.07¼@.07½
Sulphate		"	.02@.02¼

THE RARE ELEMENTS.

Prices given are at makers' works in Germany, unless otherwise noted.

	Cust.	Meas.	Price.
Barium—Amalgam		grm.	$1.19
Electrol		"	5.71
Beryllium—Powder		"	5.95
Crystals		"	9.04
Nitrate (N Y.)		oz.	1.50
Boron—Amorphous, pure		grm.	.19
Crystals, pure		"	1.43
Nitrate (N. Y.)		lb.	1.50
Cadmium—Sticks		kg.	1.55
Sheets		"	2.83
Granulated		"	2.38
Powder		"	1.90
Calcium—Elect		grm.	4.28
Cerium—Fused		"	2.02
Nitrate (N. Y.)		oz.	1.25
Chromium—Fused, Elect.		kg.	5.95
Pure powder 95%		"	1.79
Chem. pure cryst		grm.	.20
Cobalt—(98@99%)		kg.	6.66@8.33
Pure		"	30.94
Didymium—Powd.		grm.	3.81
Fused, Elect.		"	5.47
Nitrate (N. Y.)		oz.	2.50
Erbium		grm.	3.09
Nitrate (N. Y.)		oz.	2.50
Germanium—Powder		grm.	33.32
Fused		"	35.70
Glucinum—Powder		"	5.95
Crystals		"	9.04
Nitrate (N. Y.)		oz.	2.75
Indium		grm.	3.57
Iridium—Fused		"	1.07
Powder		"	.95
Lanthanum—Powder		"	4.28
Electrol, in balls		"	9.04
Nitrate (N. Y.)		oz.	2.25
Lithium		grm.	2.38
Nitrate (N. Y.)		oz.	.60
Magnesium—Ingot		kg.	6.19
In wire or ribbon		"	9.99
Powdered		"	5.95@7.14
Sheet		"	9.04
Molybdenum—Fused		grm.	.15
Powder, 95%		kg.	2.62
Niobium		grm.	3.81
Osmium		"	.94
Palladium—Wire		"	.86
Sponge		"	62
Potassium—In balls		kg.	17.85
Rhodium		grm.	2.38
Rubidium—Pure		"	4.76
Ruthenium—Powder		"	2.38
Rutile—Crude		kg.	.43
Selenium—Com'l powder		"	26 28
Sublimed powder		"	35.70
Sticks		"	28.56
Silicium—Com'l		"	28.56
Chem. pure crystals		"	59.50
Amorphous		"	27.36
Sodium (N. Y.)		lb.	.65
Strontium—Electrol		grm.	6.19
Tantalium—Pure		"	3.57
Tellurium—Ch. p. sticks		kg.	107.00
Chem. pure powder		"	83.30
Thallium		"	26.18
Thorium—Nitrate 49@50% (N. Y.)		lb.	5.00
Titanium		kg.	47.60
Uranium		"	190.40
Nitrate (N. Y.)		oz.	.25
Wolfram—Fused, elect.		kg.	238.00
Powder, 95@98%		"	1.43
Chem. pure powder		"	6.43
Yttrium		grm.	3.33
Nitrate (N. Y.)		oz.	2.75
Zirconium—Com'l		kg.	119.00
Nitrate (N. Y.)		oz.	.75

NOTE.—These quotations are for wholesale lots in New York unless otherwise specified, and are generally subject to the usual trade discounts. This table is revised up to Jan. 8. Readers of the ENGINEERING AND MINING JOURNAL are requested to report any corrections needed, or to suggest additions which they may consider advisable. See also Market Reviews.